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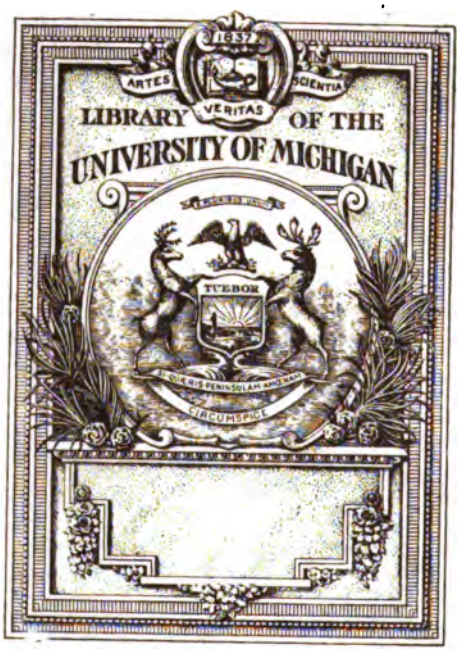

THE GIFT OF
China Inspector Gen.
of Customs

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CHINA.

38789

IMPERIAL MARITIME CUSTOMS.

II.—SPECIAL SERIES: No. 2.

MEDICAL REPORTS,

FOR THE HALF-YEAR ENDED 31ST MARCH 1889.

37th Issue.

PUBLISHED BY ORDER OF

The Inspector General of Customs.

SHANGHAI:
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INSPECTOR GENERAL'S CIRCULAR No. 19 OF 1870.

INSPECTORATE GENERAL OF CUSTOMS,

PEKING, 31st *December* 1870.

SIR,

1.—IT has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to
- Season.
- Alteration in local conditions—such as drainage, etc.
- Alteration in climatic conditions.

e.—Peculiar diseases; especially leprosy.

f.—Epidemics
- Absence or presence.
- Causes.
- Course and treatment.
- Fatality.

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking. I have committed to Dr. ALEX. JAMIESON, of Shanghai, the charge of arranging the Reports for publication, so that they may be made available in a convenient form.

3.—Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr. ....., and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 30th September—that is, for the Winter and Summer seasons.

4.— * * * * *

I am, etc.,

(Signed) ROBERT HART,

I. G.

THE COMMISSIONERS OF CUSTOMS,—*Newchwang*, *Ningpo*, *Tientsin*, *Foochow*, *Chefoo*, *Tamsui*, *Hankow*, *Takow*, *Kiukiang*, *Amoy*, *Chinkiang*, *Swatow*, and *Shanghai*, *Canton*.

SHANGHAI, 1st *September* 1891.

SIR,

IN accordance with the directions of your Despatch No. 6 *A* (Returns Series) of the 24th June 1871, I now forward to the Statistical Department of the Inspectorate General of Customs, the following documents:—

Report on the Health of Tientsin, pp. 1–5;

Report on the Health of Canton, pp. 6, 7; each of these referring to the year ended 31st March 1889.

Report on the Health of Wuhu for the eleven months ended 31st March 1889, pp. 8–10.

Report on the Health of Shanghai for the half-year ended 31st March 1889, pp. 11–48.

Clinical Studies of disease as observed in China, pp. 49–87.

I have the honour to be,

SIR,

Your obedient Servant,

R. ALEX. JAMIESON.

THE INSPECTOR GENERAL OF CUSTOMS,
PEKING.

The Contributors to this Volume are:—

A. IRWIN, F.R.C.S.I. ..... Tientsin.

J. F. WALES, B.A., M.D., CH.M. ..... Canton.

R. H. COX, L.K.&Q.C.P., L.R.C.S.I. ..... Wuhu.

R. A. JAMIESON, M.A., M.D., M.R.C.P. ..... Shanghai.

Dr. A. IRWIN'S REPORT ON THE HEALTH OF TIENTSIN

For the Year ended 31st March 1889.

With the exception of an outbreak of cholera, which proved fatal in three cases, the health of the community has been fairly good. None of the fatal cases were seen until collapse had set in and treatment was simply hopeless.

The mortality amongst the native population was very great; and Dr. Liu, of the Viceroy's staff, tells me that amongst quite a number of cases which he saw he only knew of two recoveries. The prevailing characteristic of the epidemic was the suddenness of the attack, the patient vomiting and purging a few times and then rapidly passing into a state of collapse.

During the hot weather a mild form of malarial fever was very prevalent, and change of air as usual proved the best remedy. In the latter part of the autumn an epidemic of whooping-cough set in. About 25 children were attacked. All the cases did well.

In some of the severe ones sulphurous acid fumigation appeared to give great temporary relief, but in none did it appear to cut short the progress of the disease.

An interesting case of empyema, following an attack of right pleuro-pneumonia, came under notice.

In this case the value of frequent aspirations was well shown. Some quarts of pus were drawn off at various times, and the collapsed lung allowed to expand until it filled the pleural cavity. A drainage tube was then put in; and the case ultimately did well.

I am indebted to the late Dr. Mackenzie for the following interesting notes of cases treated at the Viceroy's Hospital:—

Gangrene of the Extremities, resembling in its Nature Senile Gangrene, but occurring in the Young and Middle-aged; probably due to Chronic Ergot Poisoning.

We have notes of 10 cases of slowly-advancing gangrene, looking in appearance very much like senile gangrene, yet all occurring in men under 50 years of age. There are invariably well-marked manifestations of mal-nutrition. The patients are anæmic, cachectic-looking, and frequently suffer from diarrhœa.

The same symptoms are pretty much common to all. Tingling and numbness of the feet and legs, lasting for months, followed by pain, slight at first, but becoming excruciating as the disease advances. With the pain, redness of the skin and tenderness to the touch are noticed, beginning generally in one of the toes. At a later stage discolouration of the skin is seen, the redness assuming a more dusky aspect, and becoming mottled, green or blue. Then the epidermis separates from the parts beneath, breaks and allows of the escape of a bad-smelling discharge. Finally, the toe or toes become perfectly black and hard—actually mummified. The same state of things continues in the neighbouring parts until in many cases a line of demarcation forms. When they have applied for treatment there is always found

some part perfectly black, hard and insensible, beyond this a discoloured area, and then, around the line of demarcation, a reddened congested portion intensely painful and tender.

As to the cause of the disease, some trace it to walking in flooded fields; and this may be the immediate cause in some cases. One thing seems clear, and that is, that they have been subsisting for a long time upon improper food. Case 2 is a good instance, showing how the disease can be stayed under nourishing food. A young man of 24, he looked when admitted as if he must lose the big toe of his right foot and the middle finger of his left hand; both parts were affected and appeared to have, if not quite, yet almost, lost their vitality; yet under good food the vitality was fully restored.

There is evidently marked contraction of the arteries of the extremities affected. This is shown by the fact that after amputation, say of the fore part of the foot, there may be no vessel requiring ligature, only a general oozing of blood. Even when the entire foot has been removed, perhaps only one vessel, and that a small one, needed ligation. Case 2 brings this out in a very interesting manner. The middle finger of the left hand was involved, though it was not quite dead, and, as might have been expected, the radial pulse on this side was very small; it was perfectly thready, resembling an artery of half the size, while the right radial, where no disease existed, was full and strong. Case 7 is another one in point. Here the index and middle fingers of the right hand were affected 15 months ago. Complete death of the parts supervened; separation took place and the stumps healed. Now, there is distinct atrophy of the right arm as compared with the left, the radial artery is absent from its normal position, while a feeble, thin pulse beats at the back of the radius. He declares upon the authority of Chinese doctors who frequently examined him, and who are no novices at feeling the pulse, that two years ago his right pulse beat in the front of the arm, in the corresponding place to the left, which is normal in every way. They told him that his pulse had changed its position to the back of the arm. This thin pulsating vessel behind the radius I take to be an enlarged branch carrying on the collateral circulation in consequence of the blocking of the narrowed radial by a thrombus.

The redness, always present at some stage of the disease, denotes that venous congestion or dilatation of the veins is an accompaniment of the changes taking place. Indeed the disease appears to spread by means of a low form of inflammation which gradually destroys the vitality of the tissues attacked. I have not noticed any marked œdema. Some of the worst cases suffered from fever.

I have come to the conclusion that the gangrene here described is probably caused by eating grain which has been attacked by the ergot fungus. I have no actual proof of it; but my reasons for so thinking are:—

First, that the symptoms correspond exactly with those present in well-traced cases of chronic ergot poisoning—gangrene from eating ergotised grain having been very common at one time in certain parts of Europe. Ergot attacks not only rye, but wheat, barley, millet, etc. Here in North China the people are great bread-eaters; bread, or some preparation of flour, holding about the same position in the dietary of the people of the north that rice does in the south. Rice being mainly imported from the south is too expensive a luxury for general use.

Again, the people recognise a diseased condition of the grain common in wet seasons or when the fields have been flooded, and they state that this is invariably eaten in common with the good grain, they being too poor to set it aside as unfit for food. The districts from which the patients have mostly come have been impoverished by repeated floods.

CASE 1.—*Gangrene of Right Foot.*—TS'AI CHÊN-LUNG, aged 29; farmer, from Ts'ang-chou.

13th October 1886.—Admitted to hospital with the following history. He had suffered from pain in the right foot for two years. Without apparent cause, the big toe first and then the neighbouring ones became discoloured and very tender. The big toe is black and mummified, and has been so for two months; the other toes are discoloured, cold and bloodless. A line of demarcation is showing itself in the fore part of the foot, near the roots of the toes. Foot red and much congested in the neighbourhood of this line. Pain in the foot very intense.

16th October.—As the pain seemed to be wearing the patient out, and at his earnest request that an operation should be performed, I did PIROGOFF's amputation of the foot under antiseptic precautions.

22nd October.—Wound clean, but showing signs of a return of the disease in the flap. In great pain, requiring morphia.

23rd December.—The flap has entirely mortified, and is gradually separating. Still needs morphia injections.

24th January 1887.—The slough has wholly come away and the wound is granulating.

13th March.—Wound has cicatrised completely over the end of the tibia, and though not a good stump for walking on, is yet free from pain and without any sign of the old disease.

Left for his home.

26th December.—I saw this man at his father's farm. He is in good health, gets about with one crutch easily, and has no pain or other sign of recurrence of the disease.

CASE 2.—*Gangrene of Left Foot, with Disease commencing in the Right Foot and in Middle Finger of Left Hand; Amputation of Left Leg; Recovery.*—YIN CHÊN-HSING, aged 24; peasant, from Ts'ang-chou.

4th April 1887.—Admitted in the following condition. Left foot:—In the third, fourth and fifth toes the bones are black and bare; the sole of the foot adjacent is black in parts and discoloured in others. There is a large excavation in the heel from which a slough has come away; surrounding this cavity the skin is congested, hot, painful and intensely tender to the touch. The big toe and the dorsum of the foot look healthy. The tibial arteries cannot be felt. This condition has been existing more or less for six months. Right foot:—Four months diseased. The big toe is discoloured, very tender and extremely painful.

The middle finger of left hand is painful and the skin discoloured and shrivelled over the terminal phalanx. The radial pulse on this side is quite thready, while the right radial is full and strong. The difference is very marked.

The patient is anæmic, and requires morphia to relieve the pain.

12th April.—Operated under ether, amputating the left leg above the ankle-joint. Dressed with carbolic gauze and marine lint.

14th July.—General health has greatly improved. He has gained flesh and is looking much stronger. The stump healed without any bad symptom, though the track of the drainage tube healed slowly. The stump is a good one and quite free from pain. The finger is now quite well. The epidermis came away and the part recovered its full vitality. So with the right foot, under good food the toe recovered its normal condition.

CASE 3.—*Dry Gangrene of Big Toe of Left Foot.*—CHANG WÊN-YI, aged 42; farmer, Wu-chiao-hsien.

19th April 1887.—Admitted, with big toe dry and black. Disease of five months' duration. Amputated, removing portion of metatarsal bone at the same time.

24th April.—A small portion of the flap has sloughed.

10th May.—Goes out with a healthy granulating wound.

CASE 4.—*Gangrene of both Feet, two Years.*—AN FÊNG-HO, aged 40; farmer, Tung-kuang-hsien.

9th May 1887.—Admitted. Right foot:—Dry and mummified, leaving only the heel free. Line of demarcation has formed just in front of ankle-joint. Very severe pain. Left foot:—The bones of the toes exposed and bare.

This patient is very badly run down. Has had diarrhœa for some time.

14th May.—His diarrhœa having stopped, removed the exposed phalanges from the left foot by simply separating them from their attachments.

30th May.—The wounds are granulating well in the left foot.

1st June.—The left foot is now well; but he is not in a fit condition to stand the serious operation of removal of the right foot. He suffers much from flatulent distension of the bowels. Patient sank from exhaustion on the 26th June.

CASE 5.—*Gangrene of Right Foot.*—SU TÊ-YUEN, aged 37; farmer, Lao-ling-hsien.

19th May 1887.—Admitted. The fore part of the right foot has fallen off, leaving a large surface of the os calcis protruding. The skin is absent from each side of the ankle-joint. The part is very painful. It commenced in the usual way: numbness for many months, then gradually increasing pain, change in colour, death of the toes first, then of the whole anterior portion of the foot. A line of demarcation formed and the main part of the foot fell off, but the stump was unable to heal. The left foot was attacked 10 years ago. The toes fell off, but the parts cicatrised.

The patient's state of health is very bad. He has had diarrhœa and fever for a long time.

26th May.—Amputated in the lower third of the right leg. Dressed antiseptically.

31st May.—Gangrene returned in the flaps. Diarrhœa has returned.

The gangrene spread steadily up the leg to the trunk.

19th June.—Death.

CASE 6.—*Gangrene of Second Toe of Left Foot.*—WANG HSIAO-HSIEN, aged 34; coolie, from Hêng-shui-hsien.

29th May 1887.—Admitted. Usual history, dating from five months back. Amputated toe; dressed with marine lint.

24th June.—Dysentery set in.

8th July.—Dysentery cured with difficulty. Had to give frequent 20-grain doses of ipecacuanha.

25th July.—Goes out well.

CASE 7.—*Gangrene of Left Big Toe.*—YÜ YIN-CHANG, aged 41; farmer, living 20 *li* from Tientsin.

16th July 1887.—Admitted, with the left big toe in a state of gangrene. It commenced three months ago with intense pain.

The fingers of the right hand have suffered from the disease. The first and second phalanges of the middle and index fingers are absent, but the stumps have healed. There is no right radial pulse to be felt in the usual place, but at the back of the radius a small thready artery can be felt pulsating. His left pulse is normal. He is quite certain that the pulse was normal in the right arm two years ago, as Chinese doctors used frequently to examine it. Five months ago, he says, the right pulse moved to the back of the bone; the native doctors upon examining told him this. The fingers of the right hand were attacked with numbness and pain 15 months ago, and gradually became gangrenous. The stumps healed three months ago. There is atrophy of the muscles of the right arm as compared with the left.

26th July.—Left hospital.

CASE 8.—*Dry Gangrene of Right Foot.*—HUANG CHUNG-YI, aged 32; farmer, Chiao-ho-hsien, 300 *li* from Tientsin.

2nd October 1887.—Admitted. The fifth toe has fallen off. The fourth is black and dry. The skin covering the fifth metatarsal bone is also quite gangrenous. The dorsum of the foot, over the entire metatarsus, is red and intensely painful. He has no freedom from pain. A line of demarcation has formed and a stinking fluid escapes.

6th October.—Performed CHOPART'S amputation of foot. Very little blood in the foot. Divided the tendo Achillis. Dressed antiseptically.

14th October.—Diarrhœa has set in. Morphia injection is required twice a day to relieve the pain. A small slough has formed along the line of sutures.

23rd November.—Patient in much better health. Still requires morphia to relieve the pain. Three-fourths of the wound has healed by granulation; the remaining fourth is slowly healing, the granulating surface being healthy. There is no appearance of disease about the foot now.

28th November.—Patient much stouter and in good health. His brother has come to take him home before the river closes. The outer corner of the incision has still to granulate.

CASE 9.—*Gangrene of Middle Toe of Left Foot, dating from one Month ago.*—WANG CHIH-HSING, aged 36; coolie, one of the famine refugees now in Tientsin.

29th December 1887.—Amputation of the diseased toe.

10th January 1888.—Healing by granulation.

CASE 10.—Patient from Ch'ing-yün-hsien came to out-patient department with very advanced gangrene of both feet. Aged about 30. Did not become an in-patient. Similar history to the other cases.

METEOROLOGICAL TABLE, January 1888 to March 1889.

MONTH.	WIND. Direction. No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	WIND. Force. No. of Days Gale.	No. of Days Fresh.	No. of Days Moderate.	No. of Days Light.	BAROMETER. Highest.	Lowest.	THERMOMETER. Highest.	Lowest.	RAINFALL. No. of Days.	Quantity.	SNOWFALL. No. of Days.	TIDES. Highest.		Lowest.	
1888.										*Inches.*	*Inches.*	°	°		*In.*		*Ft.*	*in.*	*Ft.*	*in.*
January	4	3	6	9	9	1	...	5	25	30.85	30.10	38	6	...	...	...	11	6	8	0
February	11	5	4	3	6	3	5	7	14	30.70	30.22	37	3	...	...	4	13	6	8	6
March	4	8	4	4	11	4	4	11	12	30.60	30.00	60	24	...	...	...	12	0	7	0
April	4	10	4	4	8	2	6	11	11	30.55	29.85	78	40	5	1.55	...	13	0	8	6
May	3	9	9	3	7	1	5	18	7	30.40	29.30	101	47	...	...	...	14	0	8	6
June	8	8	2	3	9	1	6	15	8	30.07	29.75	104	60	4	1.38	...	13	6	9	0
July	2	7	2	2	18	...	1	11	19	30.02	29.65	102	72	5	4.92	...	13	6	9	6
August	9	8	6	1	7	1	2	8	20	30.12	29.77	93	66	11	8.77	...	16	6	10	0
September	8	2	4	7	9	...	4	13	13	30.42	29.90	85	50	3	1.45	...	13	6	9	6
October	5	1	12	7	6	5	2	9	15	30.52	29.87	75	28	...	...	...	13	6	7	0
November	7	3	7	5	8	2	1	1	26	30.85	30.05	63	20	...	...	...	16	6	6	6
December	6	2	5	2	16	2	2	4	23	30.85	30.17	44	20	...	...	1	15	6	6	0
1889.																				
January	2	...	2	14	13	3	5	3	20	30.80	30.15	32	5	...	...	2	12	0	8	0
February	4	1	3	10	10	2	5	21	...	30.80	30.07	46	8	...	...	2	12	6	7	6
March	7	6	3	10	5	2	8	8	13	30.65	29.87	65	14	...	...	2	14	0	7	0

DR. J. F. WALES'S REPORT ON THE HEALTH OF CANTON

For the Year ended 31st March 1889.

MR. Harbour Master MAY has supplied the appended abstract from the meteorological tables of last year.

ABSTRACT of CANTON CUSTOMS METEOROLOGICAL TABLES, April 1888 to March 1889.

Month.	Winds.							Weather.			Barometer.				Thermometer.			
											Day.		Night.		Day.		Night.	
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Calm.	Average Hourly Force.	No. of Days Fog.	No. of Days Rain.	Rainfall in Inches.	Highest Reading and Average Highest.	Lowest Reading and Average Lowest.	Highest Reading and Average Highest.	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.
1888.							*miles*				*Inches.*	*Inches.*	*Inches.*	*Inches.*	°	°	°	°
April	6	9	1	...	14	...	7.21	...	19	12.00	30.120 29.940	29.710 29.880	30.090 29.930	29.700 29.890	89.00 77.43	62.00 70.97	87.00 75.13	62.00 70.20
May	2	12	1	...	16	...	6.24	...	22	15.15	30.167 29.996	29.717 29.918	30.117 29.955	29.743 29.892	92.50 84.09	61.90 75.01	93.00 84.04	64.90 74.82
June	2	10	4	...	14	...	6.55	...	22	14.85	29.988 29.832	29.500 29.772	29.990 29.850	29.590 29.801	91.00 87.23	63.50 77.21	91.50 85.13	70.00 77.33
July	...	15	1	...	15	...	6.50	...	14	15.15	30.009 29.867	29.370 29.802	30.050 29.859	29.400 29.800	101.00 92.20	75.50 82.90	91.00 86.00	76.00 80.30
August	...	2	5	2	22	...	5.60	...	14	8.85	30.089 29.882	29.597 29.814	30.047 29.867	29.597 29.810	97.30 90.90	76.00 80.80	92.00 84.90	74.90 78.70
September	6	4	1	...	19	...	6.10	...	16	4.77	30.191 30.076	29.497 29.979	30.297 30.068	29.747 30.006	96.00 90.20	70.00 79.20	88.00 84.10	69.40 76.50
October	12	5	...	...	14	...	5.20	...	9	4.13	30.454 30.223	29.910 30.130	30.410 30.191	29.946 30.142	89.00 83.50	60.00 71.70	81.90 75.90	56.00 68.30
November	12	1	...	2	15	...	5.40	...	4	1.07	30.418 30.277	29.896 30.182	30.424 30.225	29.928 30.176	87.00 80.00	58.00 66.90	82.90 71.50	53.00 63.50
December	16	3	...	1	11	...	5.70	...	12	2.37	30.530 30.313	30.000 30.203	30.458 30.255	30.024 30.217	82.50 72.20	51.00 59.60	77.00 64.50	46.00 57.10
1889.																		
January	18	3	...	2	8	...	6.80	...	9	0.67	30.490 30.348	29.976 30.248	30.440 30.312	30.040 30.265	76.50 60.20	39.00 50.10	70.50 55.40	37.00 49.30
February	9	8	...	1	10	...	6.70	...	10	0.98	30.600 30.311	29.975 30.223	30.530 30.278	29.930 30.204	79.00 64.80	39.00 52.50	76.00 58.40	34.80 51.00
March	5	10	...	...	16	...	6.20	2	19	3.37	30.536 30.234	29.920 30.146	30.520 30.216	29.940 30.162	82.50 68.90	49.00 60.80	75.00 65.80	47.50 60.00

REMARKS.—1888: During April the highest reading of the barometer was 30.120, on the 1st; and the lowest 29.700, on the 8th. The highest temperature was 89°, on the 28th; and the lowest 62°, on the 2nd. Rain fell on 19 days, measuring 12 inches. S.E. winds prevailed, and the strongest was recorded on the 16th, averaging 14.6 miles an hour during 24 hours. During May the highest reading of the barometer was 30.167, on the 11th; and the lowest 29.717, on the 20th. The highest temperature was 93°, on the 10th; and the lowest 61°.9, on the 24th. Rain fell on 22 days, measuring 15.15 inches. S.E. winds prevailed, and the strongest was recorded on the 21st, averaging 11.1 miles an hour during 24 hours. During June the highest reading of the barometer was 29.990, on the 4th; and the lowest 29.500, on the 17th.

The highest temperature was 91°.5, on the 23rd; and the lowest 63°.5, on the 4th. Rain fell on 22 days, measuring 14.85 inches. S.E. winds prevailed, and the strongest was recorded on the 17th, averaging 4.6 miles an hour during 24 hours. During July the highest reading of the barometer was 30.05, on the 6th; and the lowest 29.37, on the 15th. The highest temperature was 101°, on the 14th; and the lowest 75°.5, on the 16th. Rain fell on 14 days, measuring 15.15 inches. S.E. winds prevailed, and the strongest was recorded on the 15th, averaging 16.8 miles an hour during 24 hours. During August the highest reading of the barometer was 30.089, on the 21st; and the lowest 29.597, on the 16th and 17th. The highest temperature was 97°.3, on the 6th; and the lowest 74°.9, on the 12th. Rain fell on 14 days, measuring 8.85 inches. S.W. winds prevailed, and the strongest was recorded on the 13th, averaging 9.7 miles an hour during 24 hours. During September the highest reading of the barometer was 30.297, on the 10th; and the lowest 29.497, on the 9th. The highest temperature was 96°, on the 20th; and the lowest 69°.4, on the 30th. Rain fell on 16 days, measuring 4.77 inches. N.E. winds prevailed, and the strongest was recorded on the 20th, averaging 25.8 miles an hour during 24 hours. During October the highest reading of the barometer was 30.454, on the 23rd; and the lowest 29.910, on the 18th. The highest temperature was 89°, on the 18th; and the lowest 56°, on the 22nd and 26th. Rain fell on 9 days, measuring 4.13 inches. N.E. winds prevailed, and the strongest was recorded on the 1st, averaging 10.7 miles an hour during 24 hours. During November the highest reading of the barometer was 30.424, on the 30th; and the lowest 29.896, on the 19th. The highest temperature was 87°, on the 1st and 17th; and the lowest 53°, on the 23rd. Rain fell on 4 days, measuring 1.07 inch. N.E. winds prevailed, and the strongest was recorded on the 30th, averaging 14.5 miles an hour during 24 hours. During December the highest reading of the barometer was 30.530, on the 1st; and the lowest 30, on the 30th and 31st. The highest temperature was 82°.5, on the 5th; and the lowest 46°, on the 22nd. Rain fell on 12 days, measuring 2.37 inches. N.E. winds prevailed, and the strongest was recorded on the 19th, averaging 11.1 miles an hour during 24 hours. 1889: During January the highest reading of the barometer was 30.490, on the 7th and 8th; and the lowest 29.976, on the 12th. The highest temperature was 76°.5, on the 1st; and the lowest 37° on the 22nd. Rain fell on 9 days, measuring 0.67 inch. N.E. winds prevailed, and the strongest was recorded on the 7th, averaging 13.1 miles an hour during 24 hours. During February the highest reading of the barometer was 30.600, on the 10th; and the lowest 29.930, on the 25th. The highest temperature was 79°, on the 17th; and the lowest 34°.8, on the 6th. Rain fell on 10 days, measuring 0.98 inch. N.E. winds prevailed, and the strongest was recorded on the 26th, averaging 15.3 miles an hour during 24 hours. Ice in small quantities was observed on two days, the 6th and 7th. During March the highest reading of the barometer was 30.536, on the 13th; and the lowest 29.920, on the 31st. The highest temperature was 82°.5, on the 11th; and the lowest 47°.5, on the 13th. Rain fell on 19 days, measuring 3.37 inches. S.E. winds prevailed, and the strongest was recorded on the 12th, averaging 15.6 miles an hour during 24 hours.

The general health of the residents on Shamien during the above period has been excellent. There were five deaths among foreigners. These were all members of the Customs out-door staff residing on Honam.

The diseases terminating fatally were:—

Suppurative inflammation of the liver	2
Malarial dysentery	1
Cholera	2

The first three cases died in the Hongkong Civil Hospital.

Malarial fevers and mucous diseases, *e.g.*, diarrhœa, dysentery and catarrhal affections of the air-passages, are the prevalent forms of sickness here. The former are somewhat more frequent in the spring and the latter in the autumn. There is also much general disease, especially syphilis. Cases of this complaint do exceedingly well as a rule. This is no doubt due to the prolonged summer; for during the eight months of hot weather, when the skin is bathed more or less in perspiration, specific treatment can be uninterruptedly pursued. On the other hand, cases of gonorrhœa are very difficult to cure. Injections have to be prescribed most cautiously owing to their increased tendency here to excite inflammation of the bladder and testicles; and notwithstanding all means used, the disease frequently lingers till the advent of the cool months.

Dr. KERR, the Principal of the American Mission Hospital, informs me that cholera was epidemic during the summer in and around Canton. It was not in a malignant form, although in some places numerous deaths occurred. Dysentery and malarial fevers were endemic in autumn, and caused much mortality. He regarded the past summer as having been a peculiarly unhealthy one, and consequently he avoided operating in his hospital as much as possible.

DR. R. H. COX'S REPORT ON THE HEALTH OF WUHU

For the Eleven Months ended 31st March 1889.

THE general health of the foreign community of this port (now consisting of 42 persons) has been fairly good for the period under review. This favourable result has been due in part to the lowness of the river during the summer and, to a great extent, to the improved dwellings of many of the residents.

The absence of an overflow from the river on the plain and low grounds in the immediate vicinity of Wuhu accounts for the few cases of malaria which have come under notice; at the same time the ground available for out-door exercise was for the same reason not diminished.

The better dwelling-houses of many of the residents have contributed, to a great extent, to the general health, and though many still remain unprovided with other than native houses, yet the appearance of this port during the past few years has undergone a decided improvement, and residence here has been rendered tolerably comfortable.

There has been a general tendency to constipation during the first hot months—June, July and August—and towards diarrhœa during the remainder of the year, but both only to a minor degree.

Influenza was prevalent in January and February, and few escaped at least one attack.

Two cases of parotitis occurred on board a gun-boat when stationed here; but the disease did not extend to the shore.

There were two cases of whooping-cough. The infection had taken place in Shanghai. One of the little patients while convalescent developed an attack of laryngismus stridulus; but repeated doses of ipecacuanha, and hot mustard baths gave speedy relief.

A case of serous apoplexy occurred:—

A sexagenarian of good physique and temperate habits, while stepping on a loose stone, sprained his right ankle, the foot turning inwards. This happened about 100 yards from his destination, and for that distance he had to crawl on hands and knees, the native bystanders refusing assistance. On examination a few minutes afterwards the right ankle was found slightly swollen, with great pain below and in front of the external malleolus and on the least movement of the joint. The patient's manner was much excited. He was at once placed in bed, with the affected leg elevated, an evaporating lotion applied and a mercurial purgative given. On the 2nd day the patient was still excited, with flushed face and full, bounding pulse. Had slept little during the night; ankle and foot still swollen, with abnormal tenderness. Bowels had moved twice. Saline purgative was given, and at bedtime 30 grains of bromide of potassium. 3rd day.—Had slept four hours. Bowels acted freely. Still very restless, with occasional delirium. Hyperæsthesia replaced by anæsthesia in affected leg, though movement unimpaired. Applied large blister to the back of the neck and ordered 30 grains of bromide of potassium three times a day. At 4 P.M. had convulsive movements in both arms. Expressed a wish to see a friend; but on the latter's arrival was unable to speak, though conscious. Hot mustard stupes were at once applied to limbs and abdomen,

when the attack passed off, the aphasia lasting half an hour. A minim of croton oil was given in butter, after which a considerable quantity of blood came away in the stool, he being subject to such hæmorrhages periodically. From this time he progressed favourably, the bromide being continued (90 grains in 24 hours), and was able to resume his occupation in a fortnight.

Four months later he came under treatment, having strained the knee of the same leg in a similar manner. The joint was markedly swollen on the inside and very tender at the insertion of the sartorius. Rest and cooling lotions with thorough purgation resulted in recovery without further complication.

The following case illustrates a form of injury common among the lower classes in Europe and Asia alike:—

A. B. received a thrust in both eyes from the extended fingers of an exasperated coolie. On examination an hour afterwards the conjunctivæ were found much congested, tension increased in both eyeballs, with intense photophobia and profuse lachrymation. Neither cornea was injured. The patient was placed in a darkened room and the temples blistered, while an iced solution of boracic acid was applied constantly to the eyes, and occasionally atropine and nitrate of silver solutions. In six days he resumed duty; but after a few days a relapse occurred which assumed the form of syphilitic keratitis. This was treated locally by yellow oxide of mercury ointment and constitutionally by mercurial inunction.

A slight case of sunstroke was met with as the result of violent exertion when exposed to the sun's rays in summer. The continued application of iced water to the head by means of LEITER'S coil —the bowels being freely moved—restored the patient to his usual health in a few days.

A nearly fatal case of dysentery when far advanced came under treatment, in which recovery was mainly due to the untiring attention and careful nursing of the husband, which enabled the patient to gain strength enough to reach a more bracing climate.

Among the Chinese there has been no epidemic during this period.

Leprous beggars may be seen every day in the streets of the native town with gangrenous limbs exposed as an appeal for alms.

Tinea favosa is the most striking and general disease. From 20 to 30 per cent. of the children of the poorer classes are afflicted with this skin disease, and a large proportion of the adult coolie class are rendered prematurely bald from the same cause. The Chinese know no cure for this disease when far advanced; but in the early stage they keep the head shaved at the seat of disease, which prevents its extension, and by the cleanliness entailed by this procedure cure sometimes results. Treatment by depilation is unknown.

In midwifery the following difficult case was encountered:—

A native woman, aged 26, who had been three days in labour, was found in a very exhausted state, with feeble pulse, clammy skin and dry brown tongue. The left arm and funis of the child were protruding, the arm partly decomposed and showing from its mangled state the violence used by the ignorant native midwives to effect delivery. After brandy and chicken soup had strengthened the patient, chloroform was administered by an assistant. When anæsthesia was complete, an attempt to introduce the hand into the uterus, with the intention of turning, was made; but the undilated condition of the soft parts—the patient being a primipara—and the diminished space caused by the child's arm in the vagina rendered the accomplishment of this a work of extreme difficulty. A leg was then searched for, and when found could not be firmly held, owing to exhaustion from prolonged effort and the cramped condition of the fingers from uterine pressure. After a short rest a second attempt to turn was made. The right foot of the child was grasped within the uterus and traction applied, while the impacted shoulder was pressed upwards by means of the presenting arm, and version was at length accomplished.

The rest of the delivery was easy, the flexed left leg dilating the parts for the after-coming head. The placenta was then removed by the hand in the uterus and ergotine injected subcutaneously. The uterus was washed out with a solution of permanganate of potash, a drachm to the quart, and this solution used for the three succeeding days. The patient made a perfect recovery.

I am indebted to Mr. Harbour Master E. MOLLOY for the accompanying meteorological table for the last 12 months.

ABSTRACT of WUHU CUSTOMS METEOROLOGICAL TABLES, April 1888 to March 1889.

MONTH.	THERMOMETER.			BAROMETER.			RAINFALL.
	Max.	Min.	Average.	Max.	Min.	Average.	
1888.	°	°	°	*Inches.*	*Inches.*	*Inches.*	*Inches.*
April	76	41	57.67	30.43	29.67	30.05	9.61
May	88	53	66.99	30.18	29.66	29.96	1.65
June	90	62	75.70	30.00	29.68	29.87	0.74
July	100	66	82.14	29.99	29.66	29.84	0.97
August	101	74	84.16	30.04	29.56	29.86	1.53
September	94	61	72.73	30.34	29.92	30.16	1.66
October	83	43	68.97	30.30	29.91	29.98	2.00
November	75	33	52.41	30.68	29.92	30.28	1.99
December	63	28	44.58	30.68	30.06	30.32	0.46
1889.							
January	49	18	31.62	30.60	30.08	30.42	2.80
February	60	26	37.91	30.58	29.88	31.40	2.79
March	74	31	48.53	30.58	29.82	31.10	4.31

Dr. ALEXANDER JAMIESON'S REPORT ON THE HEALTH OF SHANGHAI

For the Half-year ended 31st March 1889.

Abstract of Meteorological Observations taken at the Observatory of the Jesuit Mission at Zikawei, for the Six Months ended 31st March 1889. Latitude, 31° 12′ 30″ N.; Longitude E. of Greenwich, 8h. 5m. 45s. *

DATE.		Barometer at 32° F.	Thermometer. Diurnal Mean Temperature in Shade.	Thermometer. Extreme Temperature in Shade.	Amount of Vapour in the Air per Cubic Foot.	Diurnal Mean Humidity, 0–100.	Diurnal Mean Ozone, 0–21.	Velocity of Wind per Hour.	Mean Direction of Wind.	Total Evaporation during Month.	Total Rainfall during Month.	REMARKS.
1888.		*Inch.*	° *F.*	° *F.*	*Grains.*			*Miles.*		*Inch.*	*Inch.*	
Oct.	Max.	30.511	72.8 (14)	85.5 (14)	7.793 (18)	86.6 (25)	14.0	30.7 (22)	N. 67°.2 E.	3.416	3.785	3 rainy days.
	Mean	30.123	63.9	...	4.028	74.5	8.4	10.9				
	Min.	29.735	46.9 (22)	36.0 (22)	1.617 (27)	47.5 (21)	5.5	1.4 (24)				
	Range	0.776	25.9	49.5	...	...	...	...				
Nov.	Max.	30.662	69.7 (1)	74.3 (1)	6.247 (5)	88.6 (28)	12.0	32.7 (9)	N. 21°.6 W.	2.020	2.515	2 rainy days.
	Mean	30.228	53.8	...	3.919	79.1	9.3	13.1				
	Min.	29.784	42.0 (22)	34.3 (23)	1.393 (25)	67.9 (30)	6.0	0.0 (14)				
	Range	0.878	27.7	40.0	...	...	...	...				
Dec.	Max.	30.659	55.9 (9)	63.3 (8)	4.875 (9)	86.7 (5)	13.7	47.7 (30)	N. 4°.3 W.	1.725	0.949	5 rainy days.
	Mean	30.257	46.5	...	3.369	80.7	8.7	9.7				
	Min.	29.962	38.9 (1)	31.8 (28)	1.788 (31)	73.8 (23)	5.2	1.4 (16)				
	Range	0.697	17.0	31.5	...	...	...	...				
1889.												
Jan.	Max.	30.678	42.3 (12)	52.2 (11)	2.875 (1)	95.8 (7)	15.7	38.5 (4)	N. 15°.2 W.	1.071	1.693	Absolute calm was noted on five occasions; 17 rainy days. Hoar frost on the 4th; snow on the 7th.
	Mean	30.364	34.2	...	2.025	82.7	11.9	12.9				
	Min.	29.983	23.0 (5)	19.9 (5)	0.892 (5)	71.5 (31)	6.5	0.0(30,&c.)				
	Range	0.695	19.3	32.3	...	...	...	...				
Feb.	Max.	30.571	48.1 (10)	60.4 (16)	3.741 (21)	92.4 (25)	17.5	34.2 (22)	N. 12°.6 W.	1.723	2.265	10 rainy days; storm on the 23rd.
	Mean	30.280	38.1	...	2.557	78.9	11.6	12.6				
	Min.	29.709	29.5 (22)	22.8 (11)	1.281 (27)	61.2 (18)	7.0	1.2 (11)				
	Range	0.862	18.6	37.6	...	...	...	...				
March	Max.	30.625	63.2 (8)	72.5 (6)	5.893 (8)	97.4 (11)	17.7	36.7 (25)	S. 20°.2 E.	3.198	2.826	12 rainy days; storms on the 9th and 11th.
	Mean	30.155	48.1	...	3.672	77.4	11.9	13.7				
	Min.	29.729	37.8 (12)	29.8 (1)	1.427 (26)	60.7 (30)	6.2	0.0 (14)				
	Range	0.896	25.4	42.7	...	...	...	...				

* Position of British Consulate-General, Shanghai:—Latitude, 31° 14′ 41″ N.; longitude, 121° 28′ 55″ E. of Greenwich.

Note.—The figures in parentheses indicate the days on which the observations to which they are appended were made; under the headings "Diurnal Mean Temperature in Shade" and "Diurnal Mean Humidity" they indicate the days on which the *mean readings* were respectively highest and lowest. The monthly barometric means are deduced from four daily observations recorded in the local newspapers. The monthly thermometric means are deduced from the daily maximum and minimum, half the sum of which is taken as the mean for each day. The amount of watery vapour in the air is not observed directly. It has been assumed as an approximation that the amount is a maximum or minimum for a given period when the ratio of the tension of the ambient air to that of dry air reaches its maximum or minimum. The mean humidity is deduced from two daily observations made respectively at 4 A.M. and 4 P.M., the mean of the daily means being taken as the monthly mean. The mean direction of the wind is deduced from two daily observations made at 4 A.M. and 4 P.M. respectively.

For the above abstract I am indebted to the Rev. Père Chevalier, S.J., Director of the Zikawei Observatory.

The early winter months were remarkably mild, frost having hardly appeared before January. The last three months were cold and rainy. Snow fell but once, on the 7th January. At Zikawei the lowest temperature registered was 19°.9 F. on the 5th January, and the highest 85°.5 on the 14th October. In the settlements the lowest temperature was 19° F. on the 5th January, and the highest 86° on the 14th October.

The minimum and maximum temperatures respectively for October were 40° on the 22nd, and 86° on the 14th; for November, 41° on the 25th, and 74° on the 1st; for December, 33° on the 1st, and 64° on the 8th; for January, 19° on the 5th, and 52° on the 11th; for February 26° on the 6th and 11th, and 60° on the 16th; for March, 33° on the 1st and 13th, and 72° on the 8th.

The diseases chiefly encountered among foreigners were dysentery and diarrhœa, hepatitis, enteric fever, intermittent fever (of which there was a very large number of cases in October), rheumatism and neuralgia, and catarrhal affections of all kinds. Measles and varicella prevailed among children from December to the end of March, and parotitis was I think more common than usual. Several cases of pleurisy were noted, but none of great gravity so far as I know. Skin affections were remarkably prevalent. Towards the end of February two or three cases of scarlet fever were reported.

The mortality from disease among resident Europeans was exceptionally low. There was no death from small-pox, scarlet fever or cholera, to each of which there had been victims during the previous cool season.

BURIAL RETURN of FOREIGNERS for the Half-year ended 31st March 1889.*

CAUSE OF DEATH.	OCTOBER.	NOVEMBER.	DECEMBER.	JANUARY.	FEBRUARY.	MARCH.	TOTAL.
Enteric fever	2†	...	1†	...	...	1†	4
"*Shanghai fever*"	...	...	1‡	...	...	...	1
Intermittent fever	...	...	...	1†	*f* 1‖	...	2
Dysentery	...	1†	*f* 1†‡	1‡	...	...	3
Chronic diarrhœa	2	...	...	...	...	...	2
Hepatic abscess	1†	...	...	...	...	...	1
Bright's disease	...	1†	...	...	...	...	1
Phthisis	...	*f* 1† 2‡	1‡	1	1 1†	1†	8
General tuberculosis	...	*f* 1‡	...	...	...	...	1
Marasmus	...	...	...	1‡‖	...	...	1
Alcoholism	1	...	...	...	...	...	1
"Acute mania"	...	...	...	1‡	...	...	1
Convulsions	...	...	...	...	1‖	...	1
Dentition	...	1‖	...	...	...	...	1
Cerebral meningitis	...	...	1†	...	...	...	1
Cerebro-spinal meningitis	...	...	...	...	1‡	...	1
Locomotor ataxy	1	...	...	...	...	...	1
"Dilatation of heart"	...	...	1 1†	...	...	...	2
"Heart disease"	...	...	...	*f* 1‡	...	...	1
Catarrhal pneumonia	...	...	...	*f* 1‡‖	...	...	1
Acute bronchitis	...	...	...	...	...	*f* 1‡‖	1
Enteritis	...	...	1	...	...	...	1
Biliary obstruction	*f* 1‡‖	...	...	...	...	...	1
Sclerema	...	...	...	...	*f* 1‡‖	...	1
Cancer, thoracic	...	...	...	...	...	1‡	1
" abdominal	...	...	...	1†	...	...	1
"Fever"	*f* 1†	...	...	...	...	...	1
Poisoning, accidental	...	...	...	...	...	*f* 1‡‖	1
Fracture of skull	...	...	...	...	1	...	1
Drowned	1	...	...	...	...	1†	2
Suicide	...	...	1	1†	...	...	2
TOTAL	10	7	9	9	7	6	48

* Not including deaths (if any) among the Catholic religious bodies and the Japanese; exclusive also of premature and still births.

† Non-resident. ‡ Asiatic or Eurasian. ‖ Infant. *f* Female.

The Causes of Death usually attributed to the climate are printed in italics.

Analysing this table, we find that out of the total of 48 deaths recorded 1 was due to accidental poisoning, 1 to fracture of the skull, 2 to drowning and 2 to suicide. Excluding these, as well as 1 case of "fever" in which death occurred at sea on a voyage to Shanghai and the body was buried here, there remain 41 deaths attributable to disease (32 males and 9 females). There were 8 deaths among children, distributed as follows:—3 of European birth (2 males and 1 female), children of residents; and 5 non-Europeans (1 male and 4 females). The age of the oldest child was 4½ years (catarrhal pneumonia); that of the youngest was 10 days (sclerema). The foreign adult mortality from disease was therefore 33 (29 males and 4 females), or, excluding 11 adults of Asiatic birth, the European adult mortality was 22 (21 males and 1 female). Of these, 14 (13 males and 1 female) were non-residents. The mortality among resident European adults was therefore 8 (all males).

I.—Causes of Death from Disease among Resident European Adults.

Chronic diarrhœa	2	Alcoholism	1	"Dilatation of heart"	1
Phthisis	2	Locomotor ataxy	1	Enteritis	1

8 males, against 19 males and 3 females for the last previous corresponding period.

II.—Causes of Death from Disease among the Children of Resident Europeans.

Intermittent fever	1 (female)	Convulsions	1	Dentition	1

2 males and 1 female; the numbers for the winter six months of 1887–88 having been 5 males and 3 females.

III.—Causes of Death from Disease among Non-Resident European Adults.

Enteric fever	4	Hepatic abscess	1	Cerebral meningitis	1
Intermittent fever	1	Bright's disease	1	"Dilatation of heart"	1
Dysentery	1	Phthisis	3 (1 female)	Abdominal cancer	1

13 males and 1 female, against 13 males during the corresponding period of 1887–88.

IV.—Deaths from Disease among Children of Non-Resident Europeans.

None.

V.—Causes of Death from Disease among Non-European Adult Foreigners.

"Shanghai fever"	1	"Acute mania"	1
Dysentery	2 (1 non-resident female)	Cerebro-spinal meningitis	1
Phthisis	3	"Heart disease"	1 (female)
General tuberculosis	1 (female)	Thoracic cancer	1

8 males and 3 females, against 5 males and 3 females in the last corresponding period.

VI.—Causes of Death from Disease among Non-European Foreign Children.

Marasmus	1	Biliary obstruction	1 (female)
Catarrhal pneumonia	1 (female)	Sclerema	1 („)
Acute bronchitis	1 („)		

1 male and 4 females, as against 1 male and 1 female during the previous corresponding period.

During 1888 no sanitary work on a large scale was undertaken by either municipality. The usual routine of street and drain cleansing was pursued, very efficiently as regards the main thoroughfares, though with all the stupid and objectionable features which have frequently been pointed out in these Reports. As regards the side streets and alleys, nothing could well be less efficient, many of these being at any hour of the day all through the heat of summer as filthy as the worst quarters within the native city. No attempt has yet been made to limit overcrowding, though sooner or later a heavy penalty will have to be paid for our neglect in this particular. We come near, though happily we do not actually reach, the philosophical frame of mind of the Manila Government in face of the official statistics of cholera mortality during the year ended 31st July 1889. More than 60,000 deaths from cholera in the Philippine Islands were returned for this period, and this is how, according to the *Revue Scientifique*,* the Government through the *Siglo Medico* comments on the figures:—

> The people having now become familiar with the constant presence of this scourge, which has lost its contagious and epidemic character, calmly mind their business, paying no attention to the cholera, which after all is only one out of the numerous diseases of the country, and is not so fatal as malaria and its various manifestations.

The medical advisers, if there are any, of the Manila Government must hold original and remarkable, but fortunately singular, views about contagion.

During 1888 there were but few contributions to the literature of cholera. Drs. MACLEOD and MILLES† state that they found KOCH'S comma bacillus in 40 out of 44 cases of cholera in Shanghai (mostly Chinese patients) investigated by them; and they conclude from this fact and from minutely detailed laboratory experiments on guinea-pigs that the comma bacillus is the cause of the disease.

Four deaths occurred from enteric fever during the winter six months, all among non-residents, and all at the General Hospital.

CASE I. Man-of-war's man, aged 21.—*Symptoms previous to admission.*—Shivering; headache; foul tongue; frontal headache; constipation. Temperature reported did not exceed 100°.8.

Condition on admission (4th day).—Headache; white tongue; complains of passing restless nights, but sleeps during the day. Had a dark, healthy motion shortly after admission. No cough; sibilant râles all over chest. Respiration 18; can fill chest completely with deep inspiration without inducing any pain. No abdominal distension or tenderness. No gurgling. Complete loss of appetite. Temperature (7 P.M.) 104°. Pulse 72, compressible.

Course of Disease (5th day).—Depression; intense occipital headache; characteristic tongue; characteristic stools (two). Afternoon temperature 104°, falling to 103° at night.

7th day.—Delirious. Tongue dry. No appreciable liver or spleen enlargement. Profuse perspiration. Faint systolic murmur in cardiac region, not localised.

8th day.—Restless; trying to get out of bed. Tongue baked. Stools partly solid.

9th day.—Extreme depression; indifference. Taking milk and broths freely.

10th day.—Tongue moist; violently delirious. Sinks towards foot of bed.

11th day.—Asking for food; tongue moist; no delirium. A few doubtful spots round umbilicus. Stools hard. The first sound of the heart is markedly muffled, chiefly at apex.

* 1889, ii, 733.

† *Lancet*, 1889, i, 416, 468.

Up to this time the maximum daily temperature (103°.2 to 104°.2) was reached about 5 P.M., from 0°.5 to 2° fall occurring between that hour and 10 P.M. The early morning temperature varied between 102° and 103°.2.

12th day.—Temperature range 101°.8 (7 A.M.) to 103° (10 P.M.). General condition deteriorated. Tongue baked and brown. Slight iliac gurgling. No abdominal tenderness.

14th day.—Temperature at 7 A.M., 102°.6; at noon, 102°; at 5 and 10 P.M., 102°.4. Pulse 90 in the morning, rose to 132 (dicrotic) at night. Tongue covered with thick crusts. Sleeping fairly from time to time, with occasional intervals of muttering delirium.

15th and 16th days.—Deaf; extreme prostration; involuntary passages. Maximum temperature (at night) 103°.6.

17th day.—Erythematous patch over sacrum. Cannot protrude tongue. Lies with mouth open. Respiration superficial, irregular, abdominal.

20th day.—Constipation. Abdomen swollen, not tympanitic. Sleeps on side, but with eyes half open. Paroxysmal trembling of whole body.

21st day.—In evening, somewhat suddenly, the entire surface became cold. The forearms were strongly flexed on the arms, resisting attempts at extension. Fingers flexed, but not so forcibly.

22nd day.—Temperature nearly constant all day (101° to 101°.6). Arms free. Began to rally about 4 A.M., and seemed to improve until evening, when limbs again became icy cold, though the trunk was warm. Unconscious at night.

23rd day.—Subsultus. Remained unconscious, but surface gradually became warmer.

24th day.—Patient took nourishment when poured into his mouth until 4.30 A.M.; then jerking movements of the wrists began and continued for a couple of hours. Death occurred at 9 A.M.

Postmortem Examination, 7½ hours after death.—Average temperature of air since death 70°. Body wasted, skin parchment colour. No ecchymoses except on back. Rigor mortis well marked. No sign of commencing putrefaction. There was no discharge from any of the natural outlets.

The diaphragm was slightly arched into the thorax. There were no pleural adhesions, and the lungs were healthy. There was no fluid in the pericardium or any appearance of pericarditis. The right ventricle was distended with fluid blood; the cardiac muscle was dead-leaf colour; the valves were normal.

On opening the abdomen the transverse colon was enormously distended with gas, its inferior border reaching to within 4 inches of the pubes. There was no general peritonitis. The liver was slightly enlarged and dripped with blood on section; it weighed 65 ounces. The gall bladder was tightly distended with olive-green fluid. The spleen was enlarged and very friable, presenting two large yellow, broken-down pulpy infarcts at the upper end of its posterior border. Kidneys overfilled with blood; otherwise normal. The bladder contained a few ounces of very slightly albuminous urine.

The ileum was injected on its peritoneal surface. The last 6 inches of its mucous membrane was soft and œdematous, ecchymosed in large patches. There was no ulceration or infiltration of PEYER'S groups, but the upper surface of the ileo-cæcal valve and the mucous membrane adjoining it were gangrenous and black. There was no perforation. There were no adhesions round the cæcum. This portion of the bowel was not completely invested with peritoneum. The mucous membrane of the cæcum was deeply injected, and the cæcal surface of the valve was, like the ileac surface, gangrenous. The serous surface of the ascending colon was injected. The bowel contained a considerable quantity of apparently normal fæces. The mucous membrane as far as 2 or 3 inches beyond the hepatic flexure showed extensive patches of ecchymosis.

CASE II. Officer of a steamer, aged 44.—*Symptoms previous to admission.*—"Ill for two weeks. "Fever of irregular type. Has taken several full doses of quinine without apparent benefit. Antifebrin "in 5-grain doses always lowers his temperature quickly when it rises. The highest temperature observed "was 104°."

Condition on admission.—States that he had ague in Russia 10 years ago, and since then has had short attacks on and off. "Never intemperate." Having lived exclusively on milk for a fortnight he is extremely constipated. Tongue moist, covered with brown fur, red at edges and tip. Breath horribly offensive. No appetite. Urine red, and often muddy; does not froth on being passed. Has a short, irritating cough. Sleeps fitfully but fairly. Has had no rigor and no sweating.

Has never had any pain in the right side or shoulder. Has never spat blood. His father died at 68 of "internal cancer."

Continuous with the liver dulness is an area of dulness occupying the greater part of the region corresponding to the transverse colon. This area is tender to percussion. Everywhere else the abdomen is resonant and painless. There is no yellowness of the skin or conjunctivæ. There are no spots.

Temperature on admission (4 P.M.) 104°.6; at night 103°.2. Pulse 100, soft.

Course of Disease.—Next day (16th ?), after an enema of castor oil, there was a very copious liquid motion which looked like pure bile. The temperatures taken at 7 A.M., noon, 4 P.M. and 10 P.M. were respectively 101°, 100°.8, 103°, 102°.6. The pulse did not rise above 80.

17th day (?).—The temperatures taken at the same hours were 102°, 104°.2, 103°.8, 104°.2. The pulse did not rise above 78. The tongue was brown and dry. Skin distinctly yellow. In the morning a solid stool and in the evening one of typhoidal character were passed. Much less flatulence, so that the liver can be mapped out. Hepatic dulness begins 1½ inch below the horizontal nipple line and ends 5½ inches below it in a line 2 inches to the inner side of a vertical through the right nipple. In this line, 1½ inch above the lower limit of dulness, is an exquisitely tender spot. In the vertical through the right nipple the liver dulness extends from 2¼ inches below the horizontal through the nipples to 5 inches below the same line. There is relative dulness for ½ inch below the tip of the xiphoid appendix. It is not possible to ascertain how far the liver extends into the epigastrium and left hypochondrium. The gland cannot be palpated or in any way felt. Six leeches were applied to the sensitive spot, with considerable relief.

18th day.—The temperatures, taken as before, were 102°.2, 104°.2, 104°.5, 102°.8. The pulse rose to 96, and was unsteady.

19th day.—Temperatures 102°.3, 102°.8, 103°.6, 102°.8. Pulse varied from 84 to 108. There is now no tenderness, but patient complains of severe pain of neuralgic character shooting along the fifth rib on the left side. A normal stool was passed in the morning, but in the afternoon the passages became liquid, of a dirty-claret colour, and contained flakes of curd. The tongue was normal.

20th day.—Prostration. Temperatures 104°.2, 102°.8, 103°.2. Was sleeping soundly at 10 P.M. when temperature should have been taken. Two stools of brownish-yellow fluid, very offensive, containing curd. Complained of severe colicky pain in abdomen. Only over region of gall bladder was there any tenderness on percussion. The abdomen was tympanitic. Tongue baked.

21st day.—At morning visit the temperature was 98°.2, and did not rise above this. Extremely severe pain referred to abdomen, relieved by gentle, steady pressure, exasperated by percussion. Face Hippocratic; breath cold. Tongue scaly but moist. Stools frequent, consisting of dirty reddish-brown liquid and yellow sediment. Pulse became gradually more and more miserable, and at night could scarcely be counted. Milk and broth with port wine were taken freely up to midnight.

At 1 A.M. on the 22nd day he became collapsed, fell into a profuse sweat, and vomited about 4 ounces of loosely coagulated blood. He died at 1.30 A.M.

Postmortem Examination, 9 hours after death.—Average temperature of air since death 68°. Surface of body cold; thorax and abdomen tympanitic. Rigor mortis passing off; no odour of putrefaction. The skin of the face was yellow; purple-brown ecchymoses in supra-clavicular regions, over back and dependent parts and over external genitals. Blood was oozing from the nose and bloody foam from the mouth.

The diaphragm was strongly arched into the chest. There was a little bloody serum in the left pleura. An extensive area of the pleura covering the diaphragm was inflamed, corresponding exactly to a

similar patch on the peritoneal surface. There were no pleuritic adhesions. The lungs were retracted, normal everywhere on section. The pericardium was normal, containing no fluid. Both sides of the heart were empty; valves healthy, no insufficiency; myocardium of average thickness, not softened. The coronary arteries were pervious. No lesion of great vessels. The blood was fluid everywhere throughout the body.

The peritoneal cavity was distended with gas free from fæcal odour. On incision there was a profuse escape of turbid, yellow fluid. The diaphragm was arched into the chest; its peritoneal surface deeply injected, and patches of lymph here and there over it. Surface of stomach, of small intestines and of colon injected,—purple. The stomach was enormously distended with gas and fluid. The colon was also much distended. The great omentum was rolled up and tucked under the lower border of the transverse colon. The small intestines were distended, and glued together by flakes of recent and bands of organised lymph. Flakes of thick pus were scattered widely over their surface. The parietal peritoneum was injected, but there was no lymph deposit on its surface. The liver extended from the fourth interspace to the costal border in the nipple line. Its tissue was soft, but not abnormal to the naked eye. It weighed 74 ounces without having been drained but after the escape of a considerable amount of blood during its removal. The gall bladder was empty. The spleen was swollen and soft, covered with lymph in flakes, bathed in pus derived from a partially localised collection behind and internal to it. It weighed 12 ounces. The posterior peritoneal surface of the stomach was deeply injected, covered with flakes of lymph. It aided in enclosing a magma of broken down pus and lymph, serum and effused blood, which was retained by rather loose adhesions between the stomach, spleen and pancreas. The left extremity of the greater curvature was fringed with organised lymph in pieces from ¾ inch to 1 inch long. There were large ecchymoses on both mucous surfaces. The stomach contained a blood-stained turbid fluid. There was no perforation and no ulcer. There was no noteworthy enlargement or hardening of the mesenteric glands. The lower 18 inches of the ileum presented a vast number of solitary ulcers with central slough not yet separated. These were strictly limited by the ileo-cæcal valve, in the neighbourhood of which they were most thickly set. There was no perforation (water test under high pressure). There was no ulceration or even infiltration of PEYER'S patches. The small intestine contained, besides an enormous quantity of gas, a little bloody tenacious fluid. The cæcum was completely surrounded by peritoneum and had a distinct meso-cæcum. Its serous surface was much injected. The appendix vermiformis was normal. There was no evidence of any localised inflammation in the peri-cæcal region. The posterior cæcal glands were not in any way enlarged or distended. The large intestine was injected on its serous surface. Its mucous membrane was smeared with blood-stained fluid, here having a green tinge; when washed it appeared normal. The kidneys were very slightly congested.

This case if properly diagnosed as enteric fever belonged to a class of the disease which will be discussed in another place.

CASE III. Marine, aged 18.—Sent to hospital without any history. He states that he has been ailing for seven days, but said nothing about it until the day before admission as he was training for a boat race. He believes he got cold, pulling. Nine days ago he was drunk and fell more than once into the water, after which he remained in wet clothes. No history of rigors. Copious watery stools (two or three daily); no appetite; urgent thirst. Sleepless.

Condition on admission (7th day).—At noon, 5 P.M. and 10 P.M. his temperature was respectively 103°.4, 104°, 104°. Pulse 102, full and soft. Respirations 42. Has a hacking cough with scanty, frothy expectoration. There is slight tympanites. No pain or gurgling or local tenderness. Tongue dry and brown with red edges and tip. The base of the right lung is dull, and over a patch a little larger than a dollar fine crepitation is audible.

Course of Disease (8th day).—No delirium; much disorderly muscular action. Sputa rusty. Temperatures, as before, 103°.5 (7 A.M.), 104°, 104°.2, 104°. Respiration 33 to 42.

9th day.—Delirious. Tongue dry; lips parched. There is no flush. No spots. Stools infrequent, large, solid, offensive.

10th day.—Flush on right cheek. Drowsy. Much epigastric pain. Has expectorated some pure blood. The pulse was between 88 and 96 all day; respiration 36; temperatures 103°, 104°, 104°.6, 104°.

11th day.—Right lung clearing at base; dulness on percussion, and tubular breathing over lower half of middle lobe. The lower lobe of the left lung is now engaged. In forenoon patient was extremely prostrate. Suddenly a number of minute violet spots appeared on the chin and left temple, lasting about an hour, during which the prostration deepened. They as suddenly disappeared, leaving him somewhat better. The filtered urine gave a copious deposit of chlorides with solution of silver nitrate; a cloud with cold nitric acid disappeared on boiling.

12th day.—Temperatures taken in axilla, as muscular weakness prevented the mouth being long kept closed, 102°, 103°, 104°.8, 103°.6. Pulse varied between 92 and 102; respiration between 42 and 48. There is hardly any cough, but there was a menacing paroxysm of dyspnœa this forenoon. No cardiac lesion could be detected. In the evening asked to be allowed to smoke a cigarette.

13th day.—Smart intestinal hæmorrhage, bright scarlet after a hard stool. Delirious, but sleeping much. In the evening bilious, lumpy and stinking stools without blood after a castor oil enema. The violet spots noticed two days ago reappeared to-day for an hour, with the same increased depression as before. They disappeared under pressure and on stretching the skin. They were confined to the chin and the left cheek close to the ear.

14th day.—The evanescent violet spots again appeared for a couple of hours on the same skin areas. Stools (four) frankly typhoidal. When the tongue is protruded for inspection patient does not think of drawing it back again. Temperatures 102°.6, 101°.4, 102°, 103°.

15th day.—Had two normal stools. Expectoration scanty, but very thick and bloody (not rusty). Stupid. Pulse full, vibrating, varying between 90 and 96. Respiration between 30 and 38, superficial. Temperatures 101°.4, 102°, 102°, 102°.5. Taking nourishment freely. At 7.15 P.M., rapidly one after the other, had three copious hæmorrhages from the bowel, the last unconsciously. The first was immediately preceded by a couple of hard fæcal lumps. The total quantity lost was between 60 and 70 fluidounces, mostly black clots with some scarlet liquid blood. When seen, 20 minutes later, the pulse was 96, full but very soft; face pale; surface warm; respiration 38.

16th day.—Delirious all night. No further bleeding. Passed a little albuminous urine. Much subsultus. Pulse 120, with occasional flicker; respirations 35; temperatures 104°.2, 103°, 103°.6, 101°. In afternoon asked for and smoked two cigarettes. In the evening had passed 15 ounces of urine in eight hours. It was deep in colour, clear, slightly acid; S.G. 1,021; rich in urates; no albumen.

17th day.—Temperature 100°.6 (7 A.M.) Pulse uncountable, a mere flicker; respiration 30. Very restless and anxious. At 9 A.M. nails blue; face covered with beads of sweat; groaning from pain referred to the epigastrium, which was swollen and very sensitive. Tongue baked. Takes nourishment eagerly, clutching nervously at whatever is placed in his hands. At noon he complained bitterly of cold, and died half an hour later, retaining consciousness up to 10 minutes before death, when he remarked in a clear voice "It's all over now."

Postmortem Examination, 21 hours after death.—Average temperature of the air since death 40° F. Temperature of dead-house 42°. Temperature of surface of body 50°. Body well developed, muscular. Livid patches on neck, abdomen, thighs and ankles, and on back and dependent portions of the body. Abdomen much distended; tympanitic. Eyes closed. Rigor mortis very strongly marked; no sign of commencing putrefaction. No discharge from any of the natural openings. There was a very thin deposit of fat in the areolar tissue. The muscles were red, but exuded no blood on section. The summit of the diaphragm corresponded to the fourth rib. Lungs dark, congested, fallen away from the chest wall; no pleuritic adhesions. The pericardium was normal, but contained 4 ounces of straw-coloured serum. The heart was normal in appearance; the valves and endocardium healthy. The right ventricle contained a large

decolorised solid clot, which passed from the ventricle through the tricuspid valve and auricle into the vena cava. The left ventricle was empty. The left auricle contained a white tenacious clot entangled in the mitral valve. The great vessels were healthy, containing less blood than usual. The blood throughout the body was black and perfectly liquid. The diaphragmatic pleura was deeply injected, especially on the right side. The right pleura contained about 6 ounces of bloody fluid; the left about 4 ounces of citrine-coloured serum. The lower lobe of the left lung was in a condition of red hepatisation. The lower lobe of the right lung was deeply congested throughout, and exuded a semi-purulent fluid on section at the base. There was a large hæmorrhagic infarct on the surface of the right lower lobe.

There was a large escape of odourless gas on opening the abdomen. The stomach and transverse colon were tightly distended with gas. The loops of small intestine were united by recent lymph which, diffused or in flakes, covered and matted together the entire mass. The peritoneal surface of the small intestine was everywhere deeply injected; that of the colon only slightly so. The diaphragm was strongly arched into the chest. The liver, in its normal position, was coal-black on its surface. The parietal peritoneum was almost universally injected. The peritoneal cavity contained a large quantity of citrine-coloured fluid. The true pelvis was full of this fluid along with coagulated lymph; the cæcum was buried in a mass of loosely aggregated yellow false membranes. The omentum was injected, covered with lymph, and rolled in under the transverse colon. There had been no escape of fæces. The liver was very friable, but showed no special abnormality on section. It weighed 68 ounces. The gall bladder was not distended; the bile ducts were normal. The spleen was enlarged in all its dimensions, very soft, its pulp reduced to mere putrilage. It weighed 13¾ ounces. The œsophagus was normal. The posterior mucous surface of the stomach was deeply injected; the vessels were full almost to bursting. The mesenteric glands were enlarged, some indurated, some softened; the larger and softer contained semi-purulent fluid. The duodenum was deeply injected on its mucous surface; it contained a dead lumbricoid worm, as also did the ileum. The jejunum was slightly congested for its upper 4 inches; below this it looked healthy. The ileum down to within 3 feet of the valve was healthy. The last 3 feet was studded with large deep ulcers, mostly solitary, three of which had perforated all the coats. The entire small intestine was full of yellow fluid fæces with a few lumps. The walls of the bowel were greatly thickened and softened. The ulceration was strictly limited by the ileo-cæcal valve, which was almost eaten through from its ileac aspect. There was not a drop of blood anywhere in the intestinal tract. The cæcum was slightly injected; the cæcal surface of the valve thickened and softened, but not ulcerated. The appendix was very vascular on its serous surface, buried in lymph, but otherwise normal. The posterior cæcal glands were remarkably large and hard; suppuration was beginning within many of them. The colon and rectum were healthy, and contained a few hard fæcal lumps.

The left kidney weighed 6 ounces; it was easily decorticated; congested, bleeding freely on section, otherwise normal. The right kidney weighed 4¾ ounces; normal to naked eye.

Case IV. Sailor, aged 28.—"Ill for a fortnight; laid up six days ago, chiefly on account of "constipation and severe headache. Was purged, but no change occurred as regards headache. Five days "ago night temperature was 102°.2, and thence out night temperature varied between 102°.8 and 104°. "The morning temperatures have oscillated round 101°. The pulse has never been over 90. Patient had "no appetite; was fed on milk and broth." Patient states that his illness began with shivering fits. He is now five days without a stool. Has very severe frontal headache, and some intolerance of light. He is sleepless; has never been delirious. He has no cough.

Condition on admission (14th day).—Tongue red and rather dry. Skin yellowish. Liver normal as to size. Spleen reaches to 1 inch below the costal border. Some tympanites; a few very doubtful spots. No gurgling or tenderness in the right iliac fossa. Temperature (4 P.M.) 103°. Nothing to be noted as regards heart or lungs.

Course of Disease (15th day).—After a castor oil enema, which induced several large semi-solid horribly fetid stools, there was considerable relief from headache. The stools then became characteristically

typhoid, and a number of unmistakable spots were observed. Face flushed; much depression; dozing with eyes half open. The pulse was 96 all day. Temperatures at 7 A.M., noon, 4 P.M. and 10 P.M. were respectively 101°.8, 103°, 103°, and 103°.2.

16th day.—Pulse miserable, varying between 102 and 116. Temperatures, taken as before, 103°, 103°.2, 103°.2, 103°.4. Delirium; restlessness; prostration. Tongue dry and brown. No iliac tenderness or gurgling. Spots disappearing. Stools (three) typical. No cough.

17th day.—Pulse varying between 114 and 132. Temperatures 103°.2, 103°, 105°, 105°. Lies equally well on each side and on back. Tongue white, moist, loaded. Pupils contracted, only slightly sensitive.

18th day.—Very little sleep; delirious only at night; then violent, but not mischievous. Pulse 120, dicrotic, all day. Temperatures (in axilla) 103°.6, 103°, 104°, 104°.4. Tongue brown, coated, dry down the middle. Stools (four) very copious and quite characteristic. Tympanites increasing. Distinct iliac gurgling, but no marked tenderness. In the evening the pupils were widely dilated, but sensitive.

19th day.—Semi-comatose; livid. Stools unconsciously; they are now brown liquid, extremely fetid. Pupils dilated, very slightly sensitive. No distension of abdomen. Quite delirious; articulation very defective. Tongue moist, brown, thickly loaded; patient keeps it out after being with difficulty induced to protrude it for inspection.

20th day.—Pulse running. Respiration 42. Dilated, insensitive pupils. Tries to protrude tongue, but cannot. Speech unintelligible.

21st day.—Pulse running. Respiration between 48 and 56. Temperatures 101°.8, 103°.6 103°, 103°.4. Pupils dilated; when exposed to a bright light they contract, and then (the light remaining) dilate again. Very considerable dysphagia. Seldom recognises anyone approaching his bed. Skin livid. Abdomen distended. When his arms are at rest the forearms are rigidly flexed, but occasionally he extends them without visible effort. At night, muttering; paroxysmal sweats.

22nd day.—Pulse from 132 to 144. Respiration from 42 to 48. Temperatures 102°, 102°.4, 102°.4, 102°.4. Slight cough, with a little mucous expectoration. Less dysphagia; is taking milk and soup freely. In the evening there was greatly increased rigidity of the arms. The interior of the mouth, as well as the tongue, baked, of which he is evidently not conscious.

23rd day.—Respiration 60. Temperatures 102°, 102°, 102°.6, not taken at night. Lying unconscious on back. Forearms extremely rigidly flexed. Hiccough; collapse. Liquid poured into his mouth is not swallowed. Involuntary evacuations had continued since the 19th day.

24th day.—At 2 A.M. he drank a little milk, and at 2.30 A.M. died.

Postmortem Examination, 14½ hours after death.—Average temperature of air since death 40°. Body muscular; very slight lividity of neck, back and posterior surface of arms. Eyes half open. Rigor mortis strongly developed. No odour of putrefaction. No discharges from any of the natural openings. No bleeding from the skin or muscles on section; muscles red, dry.

The diaphragm was strongly arched into the thorax. Pleuræ, lungs and pericardium normal, the latter containing a few drops of serum. The right side of the heart was empty; the left full of fluid blood. The stomach was much distended with gas, but was otherwise normal. The great omentum was gauzy, adherent by recent inflammation to both iliac fossæ. The cavity of the peritoneum contained about 6 ounces of turbid serum. Slight hyperæmia of peritoneum lining the true pelvis. The serous surface of the last 30 inches of the ileum, the cæcum and the ascending colon was much injected. The liver was gorged with blood; otherwise normal; weighed 72 ounces. The gall bladder was distended with green bile; bile ducts normal. The spleen was considerably enlarged, and reduced to a pultaceous mass; it weighed 15 ounces. The pancreas was normal. The mesentery was hyperæmic throughout; the glands large, hard or suppurating. The small intestine was normal up to within 3 feet of the valve. The mucous membrane then showed minute ulcers, at first thinly scattered, then more numerous, equally distributed over the surface corresponding to the mesenteric attachment and that opposite to it. As the valve was

approached extensive ulcers surrounding sloughing glands came into view. The ileo-cæcal valve had been greatly thickened, but was almost eaten away by ulceration from the ileac surface. Ulceration had attacked the free border, but had not encroached on the cæcal surface. The cæcum was distended, and contained a little yellow liquid fæces. Its mucous membrane was deeply injected, but was nowhere ulcerated. The appendix vermiformis was normal. There was no meso-cæcum, the posterior surface of the bowel being here uncovered by peritoneum. The retro-cæcal lymphatic glands were enormously enlarged, hard or suppurating. The mucous membrane of the ascending colon was deeply congested, soft, but not ulcerated. Both kidneys were symmetrically enlarged; otherwise normal. Weight together, 15 ounces.

I make no apology for the minute detail of these postmortem examinations. The information they give is exactly what is required to enable us to come to a conclusion as to the nature of the morbid processes which we class together as enteric fever, but which are certainly wanting in uniformity. It may not as yet be possible to classify these processes; but it is only by means of accurate observation of symptoms, scrupulously careful autopsies, and rigorous comparison of each clinical history with the corresponding anatomical appearances that we shall eventually arrive at materials for a scientific classification. How far treatment will benefit is a different question. The profound and rapidly developed lesions above recorded would appear fated to defy any treatment known at present.

I was once present at the autopsy of a case of enteric fever which proved fatal on, as well as could be made out, the 15th day. The patient had been indefinitely ailing for four or five days, after which his temperature curve was of typhoid character. The course of the disease was apparently benign. On the 13th day, after a large spontaneous evacuation of the bowels without hæmorrhage, there was intense collapse with symptoms of perforation. Death occurred 48 hours later. The peritoneal cavity was full of gas and liquid fæces. The coils of small intestine were enormously distended, injected, dry and rough on the serous surface. There was a large quantity of pus and lymph, with recent adhesions in the right iliac fossa. There were only two altered patches in the ileum, of which one was merely congested, but in the middle of the other, 12 inches from the valve, there was one solitary ulcer which had perforated by a pin-hole aperture. The mucous membrane of the cæcum was congested and soft, but was nowhere ulcerated.

This case serves to illustrate one form of the painful surprises which apparently benign enteric fever often has in store for us.*

The following abstracts of fatal cases offer special points of interest although they are not completed by postmortem reports. They do not belong to the half-year now under consideration.

CASE I.—*Enteric Fever. Low Temperatures. Mania. Convulsions. Ulceration of Corneæ. Death.*—Chinese male, aged 34. Admitted to St. Luke's Hospital under my care 21st May 1887. He had been ailing for 10 days, and had been treated with purgatives and large doses of quinine. His passages were frequent, typically typhoidal, and he was sleepless. In the evening he became acutely maniacal. During the three following days he was extremely violent when not confined in a strait waistcoat. His highest temperature was 100°.9 up to the night of the 12th day. On the 13th day he had frequent involuntary evacuations.

* Long ago RILLIET and BARTHEZ, and HENOCH, when treating of typhoid fever in young children, described cases wherein, although all the most characteristic symptoms of enteric fever were present, the postmortem signs were limited, so far as the abdominal viscera were concerned, to enlargement, softening or disintegration of one single PEYER'S patch, or to a superficial and apparently trivial inflammation of the mucous membrane of the large and small intestines (*entérite typhoïde;* R. and B.). "We must, therefore, conclude that pathological alterations may be very slightly developed, or even "altogether absent, without this fact authorising us to deny that a given case was one of typhoid" (HENOCH).

14th day.—Quieter; complains of severe abdominal pain. Abdomen tympanitic; gurgling on light pressure in right iliac fossa. Skin is very dark, so that it is impossible to say whether spots are or are not present. Tongue baked. Temperature, morning and evening respectively, 99°.5, 101°.2.

15th day.—Both corneæ ulcerating at margins. Temperature, as before, 99°.8, 99°.5.

16th day.—Tongue moist. In the evening general convulsions; wheel movements of arms; tendency to rotate to the left round vertical axis of body. Temperature 99°, 99°.8.

17th day.—Intense excitement with extraordinary contortions. Temperature 98°.6, 103°.

18th to 22nd day.—Gradually deepening stupor. Swallows milk when poured into mouth. Frequent involuntary passages of brown liquid, extremely fetid. No hæmorrhage; no tendency to formation of bed-sore.

23rd day.—Death.

Case II.—*Enteric Fever. Rapid course without Hæmorrhage. Death.*—A European female, aged 42. Admitted to the General Hospital under my care on the 24th May 1887. Was well up to the 21st May, when she experienced a violent rigor, followed by severe headache, and pain between the scapulæ. She had taken a sedative and followed this with a dose of quinine, as she had often suffered from malarious fever. Next day it was noticed that her tongue was dry and brown. During the two following nights she was sleepless and delirious; her skin was burning.

4th day.—Too restless on admission to have temperature taken. Skin pungently hot; tongue brown and dry. Two large characteristic stools in evening. At night the axillary temperature was 102°.7. She was violently delirious.

5th day.—Half unconscious; muttering in sleep; searching for things under the bedclothes. Pulse 96, soft and fairly full. Took milk freely. In the evening extreme violence; tearing night-dress and bedclothes; capturing vermin; catching flies above her head. Temperature at 8 A.M., noon and 10. P.M. respectively, 102°, 102°.8, 102°. No stool all day. Coma-vigil at night.

6th day.—Less violent. Intense pain in dorsal muscles on movement. Sweating profusely. Tongue baked. No thirst, but drinks milk and broth freely when offered. Respiration 60; pulse 108. No cough. In the evening was quiet; had had two very copious typhoid stools involuntarily. Pulse 120; respiration 45. Is very deaf, but answers rationally when she hears a question. Temperatures, as before, 103°.6, 105°, 103°.6.

7th day.—Snatches of sleep during night. Pulse running. Respiration 60, mere panting. Lies mostly in a doze, but can be roused, and then speaks naturally. Retains great strength, and twice to-day struggled out of bed and walked across the room. Tongue moist; swallowing easily. At 4 P.M. respiration 72; she cannot be roused; nails blue. Temperatures 103°.5 in the morning and 105°.2 at night, taken carefully in the axilla.

8th day.—Unconscious all night. Died quietly in early morning. Temperature immediately before death 105°.

Case III.—*Enteric Fever, second attack after four years. Rapid Course. Death.*—An Englishman, aged 30; old syphilitic case. Four years previously he had passed through a severe attack of typhoid fever which was complicated by frequent and profuse hæmorrhages from an ulcer on the left side of the back of the pharynx.

Had been out of sorts for five days, dosing himself largely with quinine. On the 4th day he got a very severe "stitch" in his right side which yielded to a dose of Dover's powder. Had been sleepless since beginning of illness, and prickly heat, which had previously been out thickly on his body, disappeared on the 2nd day. Constipation; anorexia; foul tongue; profuse sweating; severe occipital headache.

He was seen at 7 A.M. on the 5th day. Dizzy from quinine. Abdomen distended, slightly sensitive; no distinct gurgling. A simple enema brought away a large horribly fetid evacuation. Skin

yellow. Hepatic region sensitive, but no appreciable enlargement of the liver. Spleen could barely be felt and was not tender. Pulse which was rapid and unsteady in the morning, became quiet and full (96) towards night. Temperature (morning) 102.°8; (evening) 103°.6.

Delirium declared itself on the 7th day; photophobia with violent irritability of temper on the 9th; deafness on the 10th with stupidity and yet constant agitation, a condition recalling delirium tremens; vermin-hunting on the 10th and 11th; coma-vigil through night of 12th to 13th. Sleep was never good; it was got in snatches broken by visions of the most terrific kind. The pulse was weak and irregular at the beginning, but became fairly good, soft, regular, not dicrotic, on the 10th day when all the nervous symptoms were at their worst. It was a mere flicker for 36 hours before death. No cardiac bruit was at any time audible. The tongue was variable, the notes describing it as "dry," "baked," "moist," "black," on successive days; on the 11th day it was so tremulous that it could not be protruded. On the 7th day there was marked hepatic tenderness, and probably enlargement, but palpation and percussion were alike impossible. At first there was disgust for food, replaced by voracity from the 8th to the 11th day. No complaint was ever made of thirst. Sweating was profuse throughout. A faint eruption of about half a dozen pinkish spots was seen close to the umbilicus on the 8th day. Severe bilious vomiting occurred on the 8th day, but was not repeated. The stools varied. After evacuation on the 7th day of a passage "containing hard lumps, loose stuff, and a mass of putrid muco-purulent half-pulpy material" they became characteristic. From the middle of the 11th day they were passed unconsciously. Tympanites did not become distressing until the 11th day. Right iliac tenderness first became marked on the 6th day, and gurgling on the 8th. The surface and extremities were icy-cold for several hours before death, which occurred at daylight on the 13th day.

The maximum temperature recorded was 104°.6 on the 9th night; the lowest was 102°.3 on the 8th morning. The evening temperature was never below 103°.6, and was above 104° every night after the 6th. The temperature rose steadily from morning to night, and began to fall about midnight.

Case IV.—*Enteric Fever, diagnosed as "Typho-malarial." Overdosing with Quinine. Death.*—In the case of a Shanghai resident who at another port contracted what was diagnosed as "typho-malarial fever," but which from the description given was certainly enteric, during which there was intense prostration, delirium, and subsultus; tympanites, gurgling, and iliac tenderness; and which proved fatal, the diagnosis was reaffirmed after the event, on the grounds that "as there were no spots and as "the stools were sometimes brown the disease could not have been typhoid." The patient swallowed between 60 and 70 grains of quinine daily for more than a fortnight, a treatment certainly in nowise calculated to further recovery.

The occasional occurrence of such cases as this justifies the tediousness with which by means of minute descriptions I endeavour to emphasise the extreme variety in the symptoms and in the grouping of symptoms encountered in undoubted typhoid. A rigid (and unlucky) treatment is likely enough to be the outcome of a rigid (and mistaken) diagnosis.

The combination of dysentery with enteric fever is particularly fatal, not only on account of the double strain brought to bear on the victim's vital powers, but on account also of the grave hepatic complications which (I think) always present themselves when the two diseases occur simultaneously or run into one another. Without attempting to lay down any rule, I will simply say that in almost all the instances which I have observed the dysentery has preceded the enteric fever. It is not uncommon to discover ulceration of the colon in cases of apparently frank enteric fever, and ulceration of the lower end of the ileum in cases of seemingly uncomplicated dysentery. But there are groups not yet sufficiently studied in which

enteric fever is grafted on to dysentery, and conversely. Of the former the following case is an example:—

CASE V.—*Enteric Fever following immediately on Dysentery. Death.*—A foreign missionary, aged 32, four or five years in China, of robust physique and good family history, without any suspicion of malarious infection, was first seen on the 29th September 1882. For several days he had had diarrhœa, becoming more and more urgent. Two days previous to seeking advice he noticed blood in his stools, and since then he had had an evacuation of blood, mucus and flocculent stuff at least every hour. There were intense tormina before each movement of the bowels, and very painful tenesmus. The total daily loss of blood was considerable. Treated with ipecacuanha, the number of stools rapidly diminished to four in 12 hours, but without any change in their character. There was copious vomiting of green tenacious stuff. Improvement progressed, and by the 7th day of treatment the stools (two) were "loose, "slightly orange, not dysenteric, very fetid." The tongue was slightly stripped; "the liver region is "sensitive to percussion, and there is very slight upward enlargement, and to the left." Until this day the temperature had not exceeded 99°, but on this (which I shall call the first day of the fever) it rose to 101° at night. On the 3rd day the note is as follows: "Stools frequent, and of frankly typhoid "character, smelling horribly. Delirious last night, nearly sleepless. Slight tympanites. The hepatic "tender area is continuous with a strip of tenderness in the right iliac region. Rigor in early morning. "Profuse sweating three times during the day. Pulse (96 to 98) fairly good. At night some gurgling, "difficult to make out on account of sensitiveness. Tongue dry; sordes on teeth." Rose spots presently appeared. During the course of his illness physical prostration was intense, and dorsal decubitus was maintained from the 6th day out. Sacral bed-sore was threatened early, but was averted by the use of a water cushion and frequent applications of camphorated spirit. There was no mental depression however. The patient was almost always cheerful, and constantly announced that he was better. On only one day (10th) was complaint made of severe occipital headache. On the 13th day the sense of hearing was morbidly intensified, and there was much irritability about trifling noises. He was frequently delirious, with intervals of complete freedom; he began to mutter on the 9th day. General consciousness was preserved up to 12 hours before death. Sleep, which was occasionally fairly good, was generally broken by horrible dreams, or was replaced by mere drowsiness, during which vivid visions passed before his eyes. Violent rigors occurred on the 4th, 7th, 9th and 13th days, and a paroxysm of profuse sweating without rigor on the 11th. The pupils were dilated from the first, and speedily became insensitive to light. There was marked subsultus from the 10th day out; large movements of the hands on the 16th, and vermin hunting on the 18th. All through the illness any food swallowed caused intense but not long continued pain in the umbilical region; and on the 14th day the patient described a sensation as of "something "tearing deep down in the abdomen, midway between his heart and his navel." The pulse became dicrotic on the 4th day, but soon lost this character, the expansion of the vessel being generally markedly slow, even when the complete cycle was a short one *(pulsus lentus et frequens)*; it was running from the 14th day onward. Cardiac action was extremely feeble, and no bruit, muscular or other, was at any time audible. There was slight cough with expectoration of blood-stained mucus on and after the 10th day, and the bases of both lungs were dull to percussion (hypostatic congestion). A severe paroxysm of dyspnœa occurred on the 16th day, with lividity of the lips and threatened collapse. The tongue varied largely in character, sometimes normal, sometimes moist with dry and brown tip, sometimes baked; it was tremulous from the 9th day onward, and after the 15th day could not be protruded. Complaint was frequently made of sore throat; the tonsils, pillars and soft palate were congested throughout. On the whole, thirst was moderate, but on two days it was noted as urgent. There was much difficulty about nourishment; for days at a time the patient had an utter disgust for milk, soup, arrowroot or jelly, and would make no attempt to take anything but scraped raw beef. The skin became yellow on the 10th day, and it was noted on the 14th that "skin and conjunctivæ are lemon colour and the mucous membrane "of the mouth extremely pale." The whole surface was during the last three days of life bathed in cold

sweat. The stools were frequent, occasionally, but rarely, accompanied by straining, generally characteristic, sometimes containing solid fæcal lumps, often horribly fetid. They contained increasing quantities of blood clot on the 8th, 9th, 14th, 15th and 17th days, and on the last three days of life were of gangrenous odour and passed unconsciously. Vomiting of brown liquid containing blood clots occurred on the 12th day, and there were severe hæmatemeses on the 14th and 17th days. The urine was rather scanty 22 to 30 ounces) throughout, but contained nothing of note until the 13th day, when it became porter-like, in part from disorganised blood. This condition persisted to the end. Tympanites was an early symptom; it varied, diminishing on the 10th and 11th days, suddenly disappearing on the evening of the 14th day for a short period, during which it was ascertained that the liver was sensibly enlarged in all directions, but so sensitive to percussion that accurate mapping was impossible. The abdominal distension was, however, generally very great, and became distressing on the 14th day; but although it increased from the 15th day until it was enormous it was not subsequently complained of. Whenever the right iliac region could be explored it was found to be extremely sensitive, with distinct gurgling. There was in particular one spot, just above the centre of POUPART's ligament on the right side, which was exquisitely tender to the slightest touch.

1st to	5th day	. .	Max.,	103°.8	on the 2nd night	. .	Min.,	99°.4	on the 4th	morning.
6th „	10th „	. . . .	„	102°	„ 7th „	. . . .	„	97°.5	„ 8th	„
11th „	15th „	. . .	„	104°.5	„ 14th „	. . .	„	100°.5	„ 11th	„
16th „	18th „	. . . .	„	105°.3	„ 17th „	. . . .	„	100°	„ 17th	„

Death occurred on the 18th day.

No postmortem could be obtained, but the symptoms pointed clearly to the presence of pyæmic abscesses, probably in large number, in the liver. In such cases where hæmatemesis occurs I am disposed to attribute it to rupture of varices of the lower œsophageal venous plexuses, which offer a ready receptacle for the blood of the portal system hindered in its passage through an encumbered liver. During inspiration there is a derivation of venous blood to the thorax, but under normal conditions this is relieved by the bronchial, azygos and phrenic veins, which are in communication with the coronary vein of the stomach. When, however, the strain on the œsophageal veins is, as in cirrhosis of the liver and presumably in widespread suppuration, vastly increased, this relief may easily prove insufficient, the œsophageal varices may give way, and hæmorrhage into the stomach be produced.

The following is an instance of the second form of this disastrous combination, in which the course was extremely rapid.

CASE VI.—*Enteric Fever running rapidly into Dysentery. Death.*—A foreign lady, aged 43, had been ailing indefinitely for a few days, but had not been ill enough to stay away from an afternoon party, at which she danced several times. Next day she laid up, this being probably the 4th or 5th day of the fever. It was subsequently remembered that a peculiarly nauseous odour had occasionally exhaled from her skin during the four or five days previous to her lying up. There was a story (afterwards verified) of cattle disease existing at the dairy whence her milk supply was derived, and she had in fact been in the habit of drinking a moderate quantity of unboiled milk, generally diluted with aerated water. No other cases of illness were, however, traceable among the customers of the establishment in question. Her first serious complaint was of diarrhœa accompanied by intense bladder irritability. This latter symptom yielded immediately to alkaline treatment, and after the first day was in no way a feature of the illness. There was no rigor at any period, but paroxysmal sweating fits occurred (the weather was intensely hot), the odour of the sweat being very marked, resembling that of stale meat until the 8th day, after which it lost its offensive character. Intense prostration came on suddenly, and persisted from

first to last, with dorsal decubitus. It was noteworthy that the catamenia appeared on the 7th day (due date) and continued, ending on the 9th day, quite unaffected by the general condition.

The onset of marked symptoms was extremely sudden and their course very rapid. With the exception of a few hours of cheerfulness now and then, there was deep mental depression throughout, with anxiety about the progress of her case. On the 7th day, although when roused the patient was perfectly collected, there was incessant drowsy talking; on the 8th, muttering; on the 9th, incessant wandering. She was conscious up to the 10th day, but the 10th night and 11th day were passed in a condition of coma-vigil. The pupils were noted as widely dilated and insensitive on the 9th day. Hiccough was distressing from the 8th day out; subsultus and large movements of the hands occurred on the 9th day, and she began picking the bedclothes on the 10th. Deafness came on suddenly on the 9th day. Very little genuine sleep was obtained at any time, but she was drowsy throughout, disturbed however by visions. The pulse averaged 108, varying between 100 and 144, at first rapid with lingering expansion, then after the 8th day dicrotic, a mere flicker for the last two days. Cough with expectoration of blood-stained mucus was noticed on the 8th day, the effect of hypostatic congestion, which was kept in control by frequent passive movements from side to side. The heart's action was so feeble from the first that no abnormal bruit could be detected; distressing dyspnœa, no doubt of cardiac origin, occurred on the 10th day. The tongue was very variable. Already on the 5th day it was brown, dry and hard; it subsequently became moist at the tip and edges, loaded with white fur on the surface; towards the end it and the whole mouth became dry and black. It was tremulous, and power of protruding it was lost on the 10th day. On the 9th day the lips were cracked and the teeth covered with sordes. Throughout there was marked disgust for food, and usually vomiting after any attempt to swallow. Vomiting was from the first most distressing. On the 5th day it was incessant, the vomit consisting of yellow and green mucus which subsequently changed to brown or yellow liquid with stringy mucus; on the 9th day it ceased without any assignable cause. On the 8th day the skin and conjunctivæ were yellow. On the 8th also a few livid spots were detected in the umbilical region, supplemented by others on the 9th. The stools were characteristically typhoidal on the 5th day, extremely fetid; on the 6th day they consisted of almost pure blood; on the 7th day blood disappeared for some hours, and a few small fæcal lumps were observed in the yellow deposit from typical discharges; on the 8th they were made up of blood and blood-stained pulpy lumps of mucus and fæces, evacuated without straining; on the 9th they were frankly dysenteric with much tenesmus; on the 10th and 11th they were liquid, involuntary, gangrenous. Meanwhile, in spite of the rapid development of dysenteric symptoms, there was no bladder distress, and the bladder could be emptied without any desire to evacuate the bowel. As regards frequency, there were six stools on the 5th and on the 6th, nine on the 7th, 11 on the 8th and 10th, 13 on the 9th. Urine was copiously secreted; it at first contained no albumen, but after the 8th it contained a great deal, due to the diffusion through it of much altered blood, no doubt of renal origin. At no time was there any tympanites; on the contrary, excavation of the anterior abdominal wall was noted on the 9th day. Gurgling in the right iliac fossa, with exquisite tenderness, was marked on the 5th day; the hypersensitiveness disappearing two days later. On the 7th day the spleen could be distinctly felt; the liver on the same day was found to reach the upper edge of the sixth rib. Its lower border could not be defined on account of general abdominal tenderness. A couple of days later, when the abdominal wall could be palpated with more freedom, its lower edge was 1½ inch below the costal arch in the nipple line. The highest temperature noted was 102.°5 at noon on the 7th day and on the 10th morning; the lowest was 99.°2, registered on the 6th morning. Death occurred on the 11th day, that is to say, exactly a week from the day on which the patient felt ill enough to take to her bed.

Many years after the cases just related had been observed I had an opportunity, through the kindness of Dr. MARTEL, of the French Navy, of studying the history of a case of dysentery immediately followed by enteric fever which proved fatal.

CASE VII.—*Enteric Fever following immediately on Dysentery. Death. Liver riddled with Abscesses.*—The patient was 24 years old. His illness had begun with ordinary diarrhœa, neglected for several days until mucus and blood were observed in the stools. For 16 days ipecacuanha, sulphate of soda, and nitrate of silver in enema were tried in turn without any satisfactory result, the stools ranging in number from 12 to 15 in 24 hours, and consisting of mucus, epithelial débris and blood. There was no fever until about the 19th day of the disease, but after this and until the end the temperature varied between 100°.5 in the morning and 103°.3 at night. Ipecacuanha was very badly borne. The tongue was stripped of epithelium, and here and there was fiery. On the 23rd day (5th day of the fever) pus appeared in the stools, which however were not fetid. They became thin, yellow, very frequent, contained a considerable quantity of altered blood, blood-clot and clots of mucus, and were generally accompanied by tenesmus. The anterior abdominal wall was retracted. Paroxysms of colicky pain, chiefly after food, caused much distress. These pains were referred to the hypogastric region. There was much *left* iliac tenderness, and the descending colon could be mapped out, thickened and knotty. Meanwhile prostration and depression became marked. The temperature followed a typical typhoid curve, but the pulse was regular and the skin soft and natural. There was obstinate sleeplessness. There were no bladder symptoms. On the 20th, 21st and 22nd days of the fever profuse intestinal hæmorrhages occurred, amounting to from 50 to 60 ounces on each occasion. There was no hæmatemesis. Death on the 23rd day.

The autopsy revealed innumerable small abscesses in the liver, varying from the size of a pea to that of a Brazil-nut, so that any piece of the gland when thoroughly washed presented the appearance of a very coarse-meshed sponge. The colon was ulcerated throughout its entire extent, and contained a considerable quantity of altered blood. An ulcer in the cæcum had perforated. The lower end of the ileum was sown with circular ulcers in the midst of infiltrated areas, some of which had not broken down, corresponding to PEYER'S patches.

CASE VIII.—*Enteric Fever. Pyæmia. Temporary Aphasia. Death.*—A Japanese merchant travelling. First seen 22nd May 1887, supposed to be the 16th day of his illness. About the 7th May, at Hongkong, shortly after arriving from Formosa, he began to have fever. Next day there was a distinct rigor, followed by heat and sweating; he began to cough, and the fever became continued. On the 11th May ulceration of the throat with external swelling and dysphagia. On the 14th May, being still in this condition, started for Japan in the *Menzaleh*, which began to founder during the night of the 19th May. In the middle of a storm he was exposed to cold during three hours while being transferred to another steamer. Arrived in Shanghai on the 22nd May.

His servant states that burning heat alternates with profuse sweating. Sleep has been disturbed all along, but there has been no distinct delirium. Since the 17th May (11th day) the bladder and bowel have been evacuated unconsciously. The stools are described as yellow, semi-liquid, stinking. Has lately complained of pain and tenderness in left shoulder-joint. On arrival here the left shoulder and left knee were red, swollen, hot, sensitive to pressure and spontaneously painful.

It is not known whether he has had syphilis. Absence of Ricord's rosary from groins. Nothing known about his treatment; no temperature record.

16th day.—At noon patient had a severe rigor, and shortly afterwards coughed up some blood-stained mucus. After the rigor he was aphasic for about an hour. There were no other paralytic symptoms, but he remained stupid. Urine could not be collected for examination. Shortly after noon when he was seen, the temperature was 104°; pulse 96; respiration 24. Tongue dry, skin yellow, gums anæmic. No notable enlargement nor any tenderness of either liver or spleen. At 5 P.M. temperature was 100°; at 8 P.M., 104°; and at midnight, 96°. He was now able to recognise his friends. Pulse extremely compressible; lower extremities cold; tongue clean, slightly dry. The usual cardiac bruit simulating that of pericarditis was present. The lungs could be explored only with great difficulty; there was fine crepitation at the left base, and perhaps elsewhere. Abdomen swollen, resonant. Special tenderness with gurgling in the right iliac fossa. Two well-marked rose spots near the umbilicus.

17th day.—Subsultus; no delirium. Had had snatches of sleep during the night. Temperature at 7 A.M., noon and 7 P.M. respectively, 103°.6, 102°.3, 102°.1.

18th day.—Temperatures, taken at the same hours, 101°.8, 103°, 105°.4. Much distress caused by tympanites.

19th day.—Temperatures 101°.2, 103°, 104°. Sinking.

20th day.—Death.

This last case would appear to have begun as what is known as "Tamsui fever," a malarious remittent so far as my observation of many imported cases goes. But that either it passed into typhoid, or that typhoid supervened upon it, or that there is no generic difference between the two diseases, is certain. Had I been fortunate enough to secure a post-mortem some clue would possibly have been discovered to that mysterious connexion between remittent and typhoid which has given origin to the compound term "typho-malarial fever." However convenient this term may be to cloak lack of knowledge and to satisfy ignorant and pretentious relatives or friends, it is radically objectionable inasmuch as it crystallizes a pathological doctrine which in all probability is utterly wrong, and suggests a line of treatment which is distinctly hurtful. The ordinary conception of enteric fever as a pathological species of the same value as small-pox must I conceive be widened, and if there really be a species causally characterised by EBERTH's bacillus it will eventually I am confident be, at least temporarily, assigned a place in a mixed group of "Enteric Fevers."

During the period under review 16 cases of enteric fever which terminated in recovery came under my observation in the Shanghai General Hospital and in private. Of these, 15 were European males, and one was a Chinese female married to a foreigner. Their ages were as follows:—

European males, between 10 and 20 years . . .	2	both residents.
" " " 20 " 30 " . . .	9	1 resident, 8 visitors.
" " " 30 " 40 " . . .	4	3 " 1 "

Chinese female, aged 16, resident.

I summarise these cases in the same form as was adopted in my last Report.

CASE I. 4th October 1888. Chinese female, aged 16; nursing a three months old baby.—*Symptoms previous to admission.*—Rigors; intense muscular pains; sleeplessness; vertigo. Profuse purging after a small dose of castor oil.

Condition on admission (5th day).—Tongue brown, hard, with red edges. No special abdominal tenderness; some gurgling. Urgent thirst. Temperature, noon, 104°; 9 P.M., 103°.7. Stools frequent, small, liquid, yellow, with flocculent sediment, very offensive.

Prominent Symptoms during course of Disease.—No delirium; severe temporal headache, lasting for several days; a reasonable amount of sleep obtained throughout with an occasional dose of chloral; milk and soup taken freely. Breathlessness on exertion, but nothing discoverable in heart or lungs to account for it. Stools characteristic, varying from five to nine in 24 hours. Distressing tympanites and general abdominal sensitiveness until the 12th day. Scattered eruption on abdomen and lower part of thorax on the 10th day. Milk secretion diminished, but not arrested. Tongue generally white, loaded, with red edges and tip, but occasionally normal. The temperature fell to normal on the 18th day, after which it was subnormal every morning until the 22nd day. After the 22nd day it did not rise above 99°. The highest temperature was 104° on the 5th, 7th, 12th and 14th days. The maxima declined rapidly after the 16th day. No sequelæ.

CASE II. 4th October 1888. British man-of-war's man, aged 20.—*Symptoms previous to admission.*—Pains in head and limbs; sore throat; slight right iliac tenderness; tongue white, loaded. Temperature gradually rising from 100° on the first night to 104° on the fourth morning. No diarrhœa; motions dark.

Condition on admission (4th day).—Sleepless or restless, with horrible visions. No headache; no cough or any heart or lung trouble; no noticeable enlargement of liver or spleen. Marked tenderness, but no gurgling in right iliac fossa. Dulness and resistance along colon. A soap enema brought away an incredible quantity of fetid solid brown and black fæces.

Prominent Symptoms during course of Disease.—Severe muscular pain in back and legs; headache not marked. A reasonable amount of sleep was obtained with a sedative now and then. Occasional subjective feeling of cold, but without rigor. Delirious only on 12th, 24th, 33rd and 34th days. On the 12th day there was subsultus, which passed off. Constipation, necessitating frequent simple enemata. The stools very fetid, consisting generally of a couple of hard lumps followed by a characteristic "pea-soup" evacuation. Tongue generally white and moist, occasionally dry. Dicrotism of pulse detected by sphygmograph on the 6th day, appreciable to the finger on the 8th day. On the 12th day there was marked retraction of the abdomen, which disappeared after a few hours. No spots observed at any time. He took food freely.

On the 25th day, the morning temperature having fallen to 99°.4, he sat up for some time in his bed uncovered. When seen shortly afterwards he had had a violent rigor; his axillary temperature was 105°, and he was in a condition approaching collapse. No permanent harm followed this adventure. On the 27th day a mass of enlarged and indurated glands was discovered surrounding the left saphenous opening. The temperature first fell to normal on the 28th day, after which it varied between very wide limits, and in a seemingly capricious manner, up to the 38th day. Thus, without marked alteration in the general condition, it reached 105° in the early morning of the 31st day, not falling below 103° for 24 hours. After two days of almost normal readings the thermometer registered 103°.6 at noon on the 37th day and 104°.6 at 5 P.M. On the 56th day there was a sudden afternoon rise to 101°. All these rises were treated with acetate of ammonia and quinine, and speedily disappeared. Apart from the fugitive incident on the 56th day, the temperature remained normal after the 38th day. Some subsequent trouble was experienced from œdema of the left leg, connected probably with persistency of the glandular enlargement before mentioned. The patient was discharged well on the 71st day.

It was a question with me whether the intercurrent attacks of fever during convalescence were not of malarial character. But the patient had never lived in a malarious district, and had been but a short time on the China coast.

The following case was not under my care during his attack of enteric fever. The history is one of a somewhat grave sequela.

CASE III. 8th November 1888. Clerk, aged 36.—Patient was in hospital from the 25th March to the 28th April 1888 with severe enteric fever. Before leaving he had pain in the lower left chest wall anteriorly, followed by a swelling which burst about the beginning of June, and has ever since gone on draining two or three fluidrachms of serous and flaky pus daily. He has frequent attacks of fever of short duration, and the discharge increases before these attacks come on. His complexion is waxy and features puffy. Neither liver nor spleen is sensibly enlarged. Appetite good, bowels regular. Has not suffered seriously from his lesion until a few weeks ago, since which time it appears to him to cause slight attacks of spasmodic dyspnœa. Tongue brown, loaded. Temperature normal. Urine neutral; S.G. 1,015; straw coloured, with slight mucous cloud. Filtered, it gave no deposit on boiling or when treated with nitric acid in the cold. Boiled with nitric acid it turned a delicate and permanent pink.

Half an inch to the left of the middle line of the sternum and 3¼ inches above the tip of the ensiform cartilage there is a fungating ulcer. The probe entering by the side of the excrescence passes

backwards and outwards at an angle of 30° with the surface for 2¼ inches, when it enters a smooth cavity. No dead bone felt. The exploration was very painful.

There was no sign of deposit in the lungs, and this, along with the history and the patient's general appearance, seemed to negative the suggestion of a tubercular abscess.

A semi-circular flap, 3 inches in radius, with its convexity downwards and its base extending horizontally from the inner edge of the left mammary gland to the middle of the sternum, was with the areolar tissue and muscle raised from the thoracic wall. The internal intercostals between the fifth and sixth costal cartilages were divided, when an abscess cavity was opened, of which the posterior wall was formed by new tissue matted over the pleura and pericardium. The fifth rib was carious for about an inch from its articulation; it was resected. The upper half of the anterior inch of the sixth rib was also carious, and was chipped and scraped away. The sixth cartilage was found to be calcified, and was excised. An abscess cavity was now found in the lower third of the gladiolus, containing much débris and pus. This was cleared out with a sharp spoon, and a counter-opening made into it from the front of the bone. The cavities were thoroughly rubbed with iodoform, drained, and the flap replaced. Recovery was uneventful, but healing was not complete before the expiration of 10 weeks.*

CASE IV. 9th November 1888. English missionary; five years in Yunnan, where he acquired malarial fever, which generally assumed the tertian type. Since his impregnation with malaria he has suffered much distress from cardiac palpitation on any exertion.

Symptoms previous to admission.—Fever; severe occipital headache with spinal and articular pain; general muscular aching; profuse sweating; sleeplessness; rapid pulse (generally from 120 to 132); fair appetite; bowels regular and normal; tongue brown but moist; no cough. On the evening of the 4th day his temperature was 105°.1. After this the tongue became dry, and during the 5th day the temperatures were:—

1 A.M., 104°	1 P.M., 103°.2	7 P.M., 104°
7 „ 104°	5 „ 104°	10 „ 104°.1
8 „ 103°.3		

The patient was now much excited, but not delirious. General muscular tremor. Tympanites, but no marked iliac tenderness. On the 6th day he was delirious.

Condition on admission (6th day).—Heart and lungs normal; liver not sensibly enlarged; splenic dulness extends to mid-axillary line, but the spleen cannot be felt beneath the ribs. Tongue brown and dry; intense subjective sensation of cold. No gurgling or tenderness; abdomen moderately distended. Temperature at 4 and 9 P.M. respectively, 103°.7, 104°.3.

Prominent Symptoms during course of Disease.—Intermittent delirium up to 11th day. Sleep scanty and much disturbed by dreams up to end of third week. Sudden and plentiful eruption of rose spots on the abdomen on the 11th day. Tongue extremely variable in appearance; sometimes normal, then white and loaded, then brown and baked, or moist with a hard brown strip down the middle. The stools were also variable in character; sometimes solid, sometimes consisting of brown serous liquid with or without fæcal lumps, generally characteristic, always frequent and very fetid. The pulse became markedly dicrotic on the 11th day. On this day also the patient became deaf, and for the first time complained bitterly of thirst. There was a copious secretion of thick yellow mucus from the pharynx, which caused a good deal of distress in hawking it up. Throughout the disease there were frequent short sweating fits, in no way periodic. The temperature first fell to normal on the 23rd day, and did not rise above 99° after the 24th day. The highest temperature registered was 105°.1 on the 4th night. No sequelæ.

* Whether EBERTH's bacillus would have been found in the abscess cavities I do not know; it was not looked for. But it has now been often demonstrated in sequential osteoperiosteal abscesses, pleural exudations, etc.

This case, if by chance it had come to a postmortem, would have offered an opportunity of obtaining light on the connexion between a certain form of malarial intoxication and a certain form of enteric fever, which was unfortunately lost in the case reported on page 27.

CASE V. 17th November 1888. French man-of-war's man, aged 21.—*Symptoms previous to admission.*—Chill; repeated rigors; cough, with bronchitic expectoration and an occasional streak of blood. Diarrhœa. Morning temperature after the first day varied between 103°.2 and 104°; evening temperature, 104°.2. Sleeplessness.

Condition on admission (4th day).—Somewhat dusky; orthopnœa; cough; scanty, frothy expectoration; relative dulness of right side of chest posteriorly. No crepitation; dry râles everywhere; respiration 20; breathing puerile on left. Heart sounds healthy but feeble. Tongue brown, red tip and edges. Temperature all day 104°, with a run up to 105° between noon and 1 P.M. Pulse 100, of good character. Complains now of constipation. There is no sensible enlargement of liver or spleen.

Prominent Symptoms during course of Disease.—Delirium first declared itself on the 9th day, with a sudden fall of the temperature to normal and tendency to collapse. It persisted to the 42nd day, and was occasionally of violent character, but more usually muttering. The pupils were for the most part widely dilated, and but slightly sensitive to light. Subsultus was first noticed on the 21st day, and disorderly muscular movements, chiefly of the head, a little later. There was no fly catching. Spinal pain was not complained of, but headache was often severe, and general muscular aching appeared to be constant, as was inferred from the patient's almost perpetual groaning. Deafness was observed on the 7th day, and persisted until after convalescence was fully established. The amount of sleep obtained was variable; the patient sometimes slept quietly with eyes firmly closed for four or five hours at a time, and at other times was completely wakeful, or was roused by horrible visions from short snatches of sleep, in spite of moderate doses of sedatives. The circulation was miserable throughout, the pulse varying between 96 and 132. The chest cleared gradually, yet occasionally without any corresponding physical sign fits of irregular and laboured respiration came on, the breathing rate rising to 40 or 42, and so remaining for an hour or two. The tongue, which was usually dry and brown, was often perfectly normal for a few hours at a time. On the 13th day sordes began to collect on the teeth, and the lips were dry and fissured. Profuse sweating, with nothing to explain it, occurred on the 15th and 48th days. Generally the skin was dry and parchment-like. The eruption came out plentifully on the 10th day, and followed the usual course. Enormous quantities of bile were vomited on the 5th day, but subsequently the stomach was quiet. The stools were extremely variable; sometimes solid, at other times loose and bilious; olive-coloured or black and oily; yellow, frothy, liquid, with much sediment; but generally characteristic. They were passed involuntarily on the 23rd day, not afterwards. They varied in number from four to eleven in 24 hours, and were always horribly offensive. The condition of the abdomen varied; it was occasionally tympanitic, but was strongly retracted on the 24th day; there was sometimes marked iliac tenderness, often none; always gurgling. Smart hæmorrhage (black and clotted) occurred on the 19th and 22nd days, but seemed to be effectually controlled by watery extract of hamamelis in large doses (4 fluidrachms every second hour). The temperature was never excessive, and followed a curious curve, which may be followed in the accompanying table:—

1st to 10th day	Max., 105°	on	4th day	Min.,	98°.4	on	9th day.
11th „ 20th „	„ 102°.7	„	18th „	„	99°	„	12th „
21st „ 30th „	„ 102°.2	„	22nd „	„	98°	„	29th „
31st „ 40th „	„ 100°.6	„	31st „	„	96°	„	34th „
41st „ 50th „	„ 103°	„	50th „	„	98°.4	}	frequently.
51st „ 60th „	„ 103°.2	„	51st „	„	98°	}	

No sequelæ.

CASE VI. 7th December 1888. Officer of steamer, aged 25; recently arrived in China; has never had fever of any kind.—*Symptoms previous to admission.*—Chill; general malaise; severe lumbar pain;

no headache; loss of appetite; yellow, liquid, painless diarrhœa. Violent epistaxis on the 6th day of his illness, up to which time he was being ordered 15 grains of quinine five or six times daily. No headache; no cough. Urine porter-like. Sleepless.

Condition on admission (8th day).—Tongue loaded, brown in centre. No pain or gurgling in right iliac fossa. No spots. Stools infrequent but characteristic. Nothing to be discovered as regards thoracic or abdominal viscera.

Prominent Symptoms during course of Disease.—Intense prostration throughout; severe abdominal pain without tympanites. Sleep generally fair. Pulse always slow (65 to 72) and hammering. The tongue was variable; often normal, generally white with red tip and edges, or dry and stripped of epithelium. Stools generally characteristic, infrequent; once or twice dark oily diarrhœa. Rose spots appeared on the 11th day. Iliac sensibility was never marked; it was first observed on the 10th day. The maximum temperature recorded was 103° at noon of the 9th day. The temperature fell to normal on the 13th day, and did not rise above that point after the 19th day. No sequelæ.

CASE VII. American naval officer, aged 23.—*Symptoms previous to admission.*—Malaise for seven days; rigors; evening temperature has risen to 103°.5. Has been dosed with aloes, digitalis and quinine. Constant uneasiness in bowels without diarrhœa.

Condition on admission (8th day).—Flushed. Temperature (1 P.M.) 102°.8. Tongue brown, with bright red edges. Pulse fairly strong. No appetite; no pain. Abdomen slightly distended; no gurgling or tenderness in the right iliac region. Pupils widely dilated, insensitive. No notable increase in size of liver or spleen. Heart and lungs normal.

Prominent Symptoms during course of Disease.—The pupils continued widely dilated and insensitive up to the 25th day. No headache or other pain was complained of except frequent abdominal cramp (colic). There was no deafness. Sleep was variable; occasionally sound, but usually disturbed by dreams, and the eyelids were frequently half open. The pulse was often intermittent, was once or twice dicrotic, but was never miserable. There was occasional slight cough with frothy expectoration. The tongue varied from a normal condition to extreme dryness. The pharynx was congested. Thirst was never urgent, and nourishment was taken well throughout. Very heavy sweats occurred on the 16th day without producing any effect on the temperature. For the first time, on the 18th day, an eruption (plentiful) of rose spots was observed on the abdomen. This had been carefully looked for every day. The stools were usually characteristic, occasionally lumpy; infrequent. Tympanites, which was marked at first, gradually disappeared. There never was much abdominal tenderness, and gurgling was first obtained on the 18th day. The maximum temperature recorded was 104°.2 on the afternoon of the 9th day. The temperature fell to normal on the 17th, 19th and 25th days, and after this last day it was always normal in the morning. It did not exceed 99° after the 24th day. There was a gradual declension after the 17th day. On the 42nd day a herpetic eruption was observed on the reflexion of the prepuce.

CASE VIII. 29th December 1888. Marine engineer, aged 38.—Admitted on the 12th day of mild enteric fever. Temperature varied between 100° and 101°.5. There were, however, severe headache and sleeplessness, anorexia, frequent characteristic stools; marked gurgling and slight iliac tenderness. The tongue was normal throughout. All the special symptoms cleared away by the 15th day, but the patient was left profoundly anæmic; white lips and gums; breathlessness; obviously hæmic murmur at apex and base of heart; lungs normal; no marked loss of muscular strength. There was slight œdema of the ankles, and a faint cloud of albumen in the urine. Discharged well on the 26th day.

CASE IX. 3rd January 1889. American naval officer, aged 26.—*Symptoms previous to admission.*—Indisposed for a week. Rigors; severe pain in lumbar region and extremities; thirst; anorexia; sleeplessness. Temperature on 6th day at 1 P.M., 3 P.M., 6 P.M. and midnight respectively, 102°, 102°.7, 103°.8, 102°.

Condition on admission (8th day).—Pulse 100, vibrating. Tongue loaded. Abdomen tympanitic; no iliac tenderness or gurgling. No enlargement of liver or spleen. Heart and lungs normal; no cough, headache or prostration. Some lumbar pain.

Prominent Symptoms during course of Disease.—Delirium occurred on the 10th and 11th days. After the 10th day until convalescence was fully established the pupils were widely dilated. Sleep was tolerably good throughout. The pulse remained large, soft and regular. The tongue varied; sometimes normal, generally white and loaded; never dry. There were very frequent sweating fits. The skin and conjunctivæ became yellow on the 12th day, gradually clearing by the 17th day. The urine during this period was porter-like, yet the stools continued bilious. The stools were occasionally solid, generally characteristic, infrequent, fetid. There was never any tympanites, tenderness or gurgling. On the 10th day three spots were observed, but when these disappeared there was no fresh eruption. The maximum temperature recorded was 104° on the 7th night. The temperature fell to normal on the 11th day, and did not subsequently rise above 99°. The general course of symptoms was not, however, in any way affected by the lowered temperature. No sequelæ.

CASE X. 15th January 1889. British man-of-war's man.—*Symptoms previous to admission.*—Malaise for eight days, beginning with a severe rigor; "rheumatic" pains in loins, extending down thighs. Restless nights. Anorexia. Rising temperature (9th morning, 103°.6). No diarrhœa. Tympanites. Has been taking quinine in 10-grain doses three times daily.

Condition on admission (9th day).—Marked prostration; indifference. Temperature at noon 104°.4. Pulse 102, full and soft. Pharynx congested. No cough or hurry of respiration. No special iliac sensitiveness; no gurgling. The liver is not enlarged. The convex border of the spleen can be felt beneath the ribs. No tenderness. Heart and lungs normal.

Prominent Symptoms during course of Disease.—Marked prostration throughout. The fever appears to have developed a latent syphilis, dating back several years. On the 44th day a distinct coppery eruption appeared on chest and forearms, and on the following day specific sore throat declared itself, with œdema of the soft palate, ulceration of the left anterior pillar, and dysphagia. But what specially characterised the case was the frequent occurrence of intestinal hæmorrhage. On the 12th, 17th, 18th, 19th and 20th days small quantities of blood were seen in the stools. On the 21st day three hæmorrhages occurred, amounting to 80 ounces of scarlet blood, which speedily coagulated. The patient was blanched by the bleeding, but showed no signs of collapse. The temperature, which had been 104° on the night of the 20th day, was on the 21st, 99°.5 (7 A.M., four hours after the first hæmorrhage), 99°.6 (noon), 99°.8 (5 P.M.), 100°.2 (10 P.M.). It rose again on the 22nd day. Three hæmorrhages, amounting to 17 ounces, occurred on this day, mostly black clots, but had no effect on the temperature. Again, on the 24th and 37th days there were small bleedings. Whether in consequence of, or independent of, the administration of hamamelis, there was a rapid arrest of the menacing bleeding of the 21st day after lavish use of the drug. Three lumbricoid worms were expelled during the illness, two by the bowel and one by vomiting. Apart from complications, the symptoms observed were as follows: Sluggishness of the pupils from the first, which became wide dilation and absolute insensitiveness to light on the 19th day. Much muscular tremor, which, oddly enough, disappeared after the hæmorrhage. Back pain, which was distressing in the beginning, speedily disappeared. Deafness was marked after the 15th day. Sleep was variable. The patient often slept with his eyes half open, and was often sleepless, but in general a fair amount of sleep was obtained. There was at first a curious back stroke immediately after each beat of the pulse; it then became vibrating, and afterwards dicrotic, but the dicrotism disappeared after the hæmorrhage. The usual systolic bruit at base and apex was present after the 13th day. There was occasional cough, with nothing in the lungs to account for it; it was due probably to pharyngeal inflammation. As early as the 15th day there was deep injection of the pharyngeal mucous membrane, and much distressing hawking of blood-stained mucus. Paroxysmal attacks of sighing respiration came on now and then without assignable cause. The condition of the tongue was variable; often normal, then dry, or brown and baked

without obvious connexion with other symptoms. It was frequently tremulous, but without fibrillary twitching. The breath was offensive throughout, due probably to the condition of the pharynx. Paroxysms of profuse sweating often occurred, but had no effect on the temperature. The cheeks were now and then deeply flushed; from the 44th to the 47th day the skin was yellow, as also were the conjunctivæ. At the same time there was no hepatic tenderness, and the stools though constipated were not deficient in bile. Severe bilious vomiting occurred on the 45th and 46th days. Twelve spots of rose-rash were counted round the umbilicus on the 13th day. On the 44th day, as mentioned before, a syphilitic eruption appeared on the chest and arms. The stools were variable; occasionally dark and solid, or characteristically typhoid, or brown liquid; from one to nine in 24 hours. From the 38th day onward constipation was troublesome. Tympanites was sometimes present, generally absent. Tenderness and gurgling were present from the 10th to the 30th day. The following table shows the course of the temperature:—

8th to 10th day	Max., 104°.4 on 9th day		Min., 102°.4 on 10th day.	
11th „ 20th „	„ 104°	frequently in afternoon	„ 101°.5	„ 18th and 20th days.
21st day	„ 102°.2	*(hæmorrhage)*	„ 99°.5.	
22nd to 24th day	„ 104°.6 on 22nd day		„ 100°	on 24th day.
25th „ 30th „	„ 99°.8	„ 25th and 30th days	„ 97°.5	„ 28th „
31st „ 40th „	„ 104°.3	„ 37th day	„ 98°.8	„ 32nd „
41st „ 50th „	„ 104°.2	„ 44th day *(syphilitic eruption)*	„ 99°	„ 50th „
51st „ 55th „	„ 98°.6	frequently	„ 96°.8	„ 53rd „

There were no sequelæ.

Case XI. 19th January 1889. American sailor, aged 24.—*Symptoms previous to admission.*—General malaise; shivering; night sweats. Pains everywhere; no appetite; no sleep, or only short snatches disturbed by horrible dreams. Constant trembling.

Condition on admission (4th day).—Temperature 101° at 10 A.M. Tongue dry; pupils dilated; pulse vibrating; no distension or tenderness of abdomen; stupid.

Principal Symptoms during course of Disease.—Severe pain in the legs was constantly complained of. The pupils, with an inexplicable interval between the 22nd and 26th days, during which they were sensitive, were widely dilated. Sleep was generally disturbed by horrible dreams. The pulse presented a back stroke after each beat, difficult to describe, but different from ordinary dicrotism,* or it was dicrotic; from the 8th to the 21st day it was remarkably slow—40 to 66 per minute, the slowness being due to prolonged expansion of the artery.† There was slight cough, with nothing discoverable in the chest to account for it. The tongue was variable; from time to time noted as "dry," "baked," "brown," "white and moist," and normal, these changes occurring in the course of a few hours. Sweating was frequently profuse. Three spots of rose-rash were discovered on the 12th day. Food was taken freely. The stools were frequent, consisting at first of inky fluid, then generally characteristic with occasionally olive lumps, or brown fluid with yellow sediment. Slight gurgling was observed on the 7th day; there was at no time marked tenderness. The maximum temperature was 104°, recorded on the 4th day. The temperature fell to normal on the 14th day, and never again rose above it, although the general course of symptoms proceeded in the usual way to the 30th day, when convalescence was established. No sequelæ.

* It closely resembled, if it was not identical with, the "pulsus bisferiens" of aortic stenosis, but I could find nothing to explain it.

† The "pulsus tardus" or "lentus" of old authors, as opposed to the "pulsus rarus" or "infrequens," with which it is frequently confounded in mistranslation. The true meaning is "lingering." Thus:—

Media fert tristis sucos *tardum*que saporem
Felicis mali. Virg., *Georg.*, ii, 126.

—the lingering flavour;

Artius atque hedera procera adstringitur ilex,
Lentis adhaerens brachiis. Hor., *Epod.*, xv.

—in lingering embrace.

CASE XII. 22nd January 1889. American man-of-war's man, aged 44.—*Symptoms previous to admission.*—Malaise for 14 days; no appetite; sleepless; violent headache; constipation; temperature for last two days 101° in morning, 103° at night.

Condition on admission (exact period of disease not known).—Tongue dry, flat, fiery red. Pulse dicrotic. Pupils dilated but sensitive. Severe headache; no muscular pain. Slight tympanites, gurgling and sensitiveness. Temperature on admission (noon) 102.°6. Pulse 72, full and soft. No eruption. Nothing discoverable in chest. Liver extends slightly below costal border. Spleen not sensibly enlarged.

Prominent Symptoms during course of Disease.—Intense prostration from the first, with early and prolonged delirium. Pupils were dilated and usually insensitive until convalescence was established. There was no marked headache, backache or muscular pain. He became deaf on the 10th day after admission. The respiration from time to time became superficial, rapid and laboured, without cause discoverable on examination of the heart and lungs. Sleep was variable, generally disturbed. The pulse continued dicrotic until near the end of the fever and long after the temperature had fallen. During the first six days of the intermediate fall of temperature, as noted below, the pulse rate was remarkably slow (48 to 60), due to prolonged expansion of the artery. The tongue changed rapidly through all degrees of dryness, with normal intervals; transverse fissures were often observed. It was notably tremulous on several days. All through nourishment was well taken. Sweating occurred frequently and was profuse. There was no rose-rash at any time. The stools were infrequent, generally characteristic, sometimes lumpy, varnishy, brown and watery. Constipation had occasionally to be overcome by enemas. On the 7th day after admission there was a hæmorrhage to 44 ounces, mostly black clots. This had no effect on the temperature and did not recur; it was treated with hamamelis. Tympanites was present throughout; it was sometimes considerable. There was not much local tenderness, but iliac gurgling could at all times be produced by gentle palpation. The temperature course was instructive. The fever had practically disappeared for some days, when on the 30th day after admission the patient obtained possession of and ate some food which had been served to a ward companion. The effect was immediate in causing a return of fever, which, however, could not justly be considered a true relapse.

1st to 12th day after admission	.	Max.,	104°.2	on the 2nd day	.	Min.,	99°.2	on the 11th day.				
13th „ 30th	„	„	. .	„	99°.8	„	30th	„ . .	„	95°	„	20th „
31st „ 43rd	„	„	.	„	104°.2	„	39th	„ .	„	98°.4	„	32nd and 33rd days.

There were no sequelæ.

CASE XIII. 29th January 1889. British man-of-war's man, aged 26.—*Symptoms previous to admission.*—Rigor four days ago; headache and severe backache; sleeplessness. Rising temperature, reaching 104°.2 at night. Diarrhœa; dry and coated tongue; epigastric distension and tenderness.

Condition on admission (4th day).—Pale; prostrate; severe frontal headache, and lumbar pain on any movement; exquisitely sensitive area the size of a dollar, with its lower limit 2 inches vertically above umbilicus. Tongue moist, covered with white fur. No iliac tenderness or gurgling. No perceptible enlargement of liver or spleen. Heart and lungs normal.

Principal Symptoms during course of Disease.—Prostration and mental depression were marked throughout. The pupils were constantly dilated, generally insensitive, with one or two intervals; they did not become permanently normal until the 42nd day. There was subsultus for three or four days after the 8th day, and a severe paroxysm of general muscular trembling on the 31st day. Headache, chiefly referred to the back of the orbits, was severe; there was no spinal or muscular pain, but for eight days there was an extremely sensitive spot in the epigastric region. The patient was never deaf. Sleep was variable; sometimes sound, but generally for the first fortnight, and afterwards during successive days of high temperature, disturbed and obtained with the eyes half open. The pulse became dicrotic on the 7th day, and so continued until final convalescence. Respiration was paroxysmally oppressed without corresponding alteration in pulse or temperature. There never was any cough. The tongue was dry, scaly or normal.

Food was taken freely throughout. There were frequent and heavy sweats, which were always followed by a fall in the temperature. No rose-rash was observed. The stools were always fetid; generally characteristic, occasionally bilious and loose or containing lumps. From time to time colic was severe. There was never any marked tympanites. The course of the temperature would suggest a relapsing form; but inasmuch as the general symptoms were not affected in their course by any fall of bodily heat, such an assumption would not be justified. The case must be regarded as one out of many illustrations of the doctrine that the essential character, whatever it may be, of enteric fever is not necessarily linked to the usually elevated temperature. Thus:—

From 3rd to 14th day	. Max.,	104°.2 on 3rd day	. . .	Min.,	98°.4 on 14th day.	
„ 15th „ 31st	„ . .	„ 101°	„ 15th and 17th days	„	98°	„ forenoons of 22nd to 31st days.
„ 32nd „ 43rd	„ . .	„ 103°.6	„ 34th day	„	98°.4	„ 32nd day.
„ 44th „ 56th	„ . .	„ 99°.8	„ 48th „	„	96°	„ 49th and 52nd days.
„ 57th „ 71st	„ . .	„ 102°.8	„ 60th „	„	97°.5	„ 71st day.

There were no sequelæ beyond intense pain of cramping character in the calves and front of thighs, which persisted for about 10 days.

Case XIV. 9th March 1889. Child of European resident, aged 10.—*Early Symptoms.*—Pungent skin; congestion of pharynx; cough; anorexia; white tongue; grinding of teeth. Worms had been suspected, but none were expelled after a couple of doses of santonine.

Condition when first seen (4th day).—As just described. There was no lachrymation, coryza or eruption; no headache or backache. Tongue dry and brown. Heart and lungs healthy. No splenic enlargement.

Prominent Symptoms during course of Disease.—Intense prostration and rapid wasting. Delirium occurred on the 11th day; it was generally quiet, sometimes muttering, once or twice violent. After the 10th day speech was very slow, and the child had evidently much difficulty in collecting and expressing his thoughts. There was a short fit of complete unconsciousness on the 16th day, and a violent rigor on the 20th day. Vertigo was complained of on the 10th day, and continued on and off until the 15th day, after which listlessness was so pronounced that no complaint was ever made of anything. Deafness came on on the 11th day, and rapidly became intense; it did not entirely disappear until many days after convalescence had been established. The pupils were dilated and insensitive on the 11th day, and so continued for some time after recovery. There did not appear to be any headache or backache, but there was marked intolerance of light, and as the fever disappeared there was severe cramping pain, in the calves chiefly, which lasted for several days. On the 7th and 8th days bitter complaint was made of midsternal pain and tenderness, for which no cause could be discovered. The supposition of a commencing periostitis had to be abandoned as the pain disappeared spontaneously after 48 hours. Sleep was usually good, with occasional prolonged fits of restless drowsiness; the child's eyes were generally closed during sleep. The pulse was never dicrotic, but was extremely weak and frequent; from the 8th to the 21st day it varied between 120 and 136. Respiration was rapid and shallow, ranging from 36 to 52 between the 11th and 19th days. When the fever was at its worst the character of the respiration was curious: there was a short shallow inspiration, instantly followed by a short superficial expiration, and then a long pause. Cough was not continuous, but was every now and then troublesome, sometimes hard, generally loose, and accompanied by large bronchial râles. The tongue was sometimes brown and dry, sometimes white and moist, never fissured. It became tremulous, and the child could not protrude it on the 12th and following days, and it was noticed on the 14th day to be flabby, yielding and falling back before the thermometer. The pharynx was congested for many days; so much congested on the 20th day as to cause a certain amount of dysphagia. The lips became covered with sordes on the 9th day, and speedily cracked. There was never any urgent thirst. Food was taken freely, except for a day or two when the condition of the throat was an obstacle. Profuse sweating was of frequent occurrence; on only one occasion (20th day) did it appear to influence the tem-

perature. Rose-rash appeared on the 11th day, and crops of sudamina succeeded one another after the 17th day. Severe vomiting occurred twice (18th and 20th days); on each occasion it was induced by a violent coughing fit and was accompanied by a copious evacuation of bronchial mucus. The stools were infrequent, never fetid; they were usually typical, with occasional hard lumps. For the first twelve days the urine was loaded with lithates; afterwards it was clear and copious. Tympanites was present after the 10th day, and was sometimes distressing; neither tenderness nor gurgling was at any time noted in the right iliac fossa. It was noticeable in this case that the general symptoms closely followed the course of the temperature.

4th to 9th day	Max.,	105°.4 on 6th day	Min.,	103°.5 on 9th day.
10th „ 14th „	„	105°.2 „ 12th „	„	101°.3 „ 13th „
15th „ 19th „	„	103°.7 „ 19th „	„	97°.5 „ 15th „
20th day	„	97°.7 at 3 P.M.	„	95° at 1.30 A.M.
21st to 23rd day	„	102°.2 on 21st day	„	97° on 22nd day.
24th „ 31st „	„	99° „ 30th „	„	95° „ 25th „

Case XV. 27th March 1889. Child of European resident, aged 15.—*Early Symptoms.*—Evening rigors, with severe headache, which has become continuous. Sleeplessness. Congestion of pharynx. Constipation.

Condition when first seen (7th day).—Tongue dry; conjunctivæ injected; pungent skin; abdominal distension and tenderness; loaded urine. Stools, the effect of castor oil, yellow and extremely offensive.

Prominent Symptoms during course of Disease.—In this case there was a total absence of purely nervous symptoms. There was no increase in the area of hepatic or of splenic dulness. There was no eruption. On the other hand, tympanites became marked on the 8th day, and became excessive, being notably greater to the right of the middle line (a phenomenon unique in my experience). There was excessive iliac tenderness, and distinct gurgling independent of diarrhœa. The stools were variable in number and quality, sometimes infrequent, almost always characteristic, occasionally hard. The tongue too was variable, generally moist, once or twice brown and hard, frequently normal. The back of the pharynx and pillars were considerably congested. Sweating was profuse, and in the intervals there was a peculiar pungency of the skin altogether out of correspondence with the mouth temperature, which never rose above 102°.6 (8th day), continued over 100° to the 20th day, and then fell permanently to normal. The pulse was often found at 65, or thereabouts, of the lingering character previously described.

Case XVI. 28th March 1889. Englishman, aged 28.—*Symptoms previous to admission.*—Intense malaise for six days; sleeplessness; nightly headache; abdominal pain; vomiting after food; stools infrequent, loose, dark-brown and white mixed. Urine porter-like. Patient is a total abstainer.

Condition on admission (7th day).—Tongue moist, white; conjunctivæ yellow; skin yellow, puffy, not exactly œdematous; sweating heavily. Pulse 144, very soft. Temperature 103°.8. Urgent thirst. Slight downward enlargement of left lobe of liver, but no tenderness. No gurgling, but slight sensibility in right iliac fossa. No spots. Nothing to be discovered as regards heart, lungs or spleen. Urine loaded with lithates and with the colouring matter of the bile; no albumen. Patient extremely prostrate and irritable.

Prominent Symptoms during course of Disease.—There was no delirium at any time, but prostration was intense throughout. Towards the end of the second week there was much subsultus and large muscular trembling. The pupils were dilated and insensitive, and there was severe frontal headache until convalescence was fully established. A severe rigor occurred on the 12th day, after which the temperature fell to 95°, but rapidly rose to 103°. Deafness was observed from the 8th day. There was occasional sleeplessness, but as a rule a fair quantity of sleep was obtained, generally, however, much disturbed by terrifying dreams. The pulse after admission was never extremely rapid; it was always compressible, and fell to 60 for several hours on the 9th and 11th days. There was never any cough, but occasionally, without obvious cause, fugitive attacks of dyspnœa occurred. The tongue was variable, sometimes normal, sometimes white or

brown, once or twice dry. The back of the pharynx and pillars were congested, and once or twice there was some pain in swallowing. There was marked disgust for food, succeeded by voracity about the 28th day. There was constant and profuse sweating. The skin was canary yellow during most of the illness, clearing for a day or two at a time, but not losing its coloration finally until the 28th day. The urine was porter-like for a few days longer. There was no rose-rash; no gurgling; tympanites was slight and occasional. Up to the 34th day there was frequent bilious vomiting, with once or twice slight hæmatemesis, due apparently to straining. The stools were generally characteristic; now and then olive-green and oily; like washings of meat on the 38th day (after intestinal hæmorrhage). Dysuria occasioned much distress on the 8th and 9th days; its cause was obscure. Severe hæmorrhage occurred on the 38th day, after indulgence in dried fruit which had been surreptitiously brought to him. The bleeding recurred to a slight extent on the 39th day. How irregular the temperature curve was will be seen by the following table:—

7th day	Max., 103°.8 at 9 P.M.	Min., 101°.7 at 8 A.M.
8th „	„ 99°.4 „ 8 A.M.	„ 96° „ 4 P.M.
9th to 20th day . . .	„ 104°.6 on 13th night . . .	„ 95° on 12th morning.
	Temperatures normal or subnormal in early morning.	
21st to 30th day . . .	Max., 103° on 28th evening . .	Min., 97°.8 on 21st morning.
31st „ 39th „	„ 104°.4 „ 37th „ . . .	„ 96°.6 „ 31st „
	After the 39th day the temperatures were normal or subnormal.	

Although not belonging to the period under review, I will, in order to complete these illustrations of enteric fever as seen in Shanghai, refer to or report a few other cases which presented some peculiarities worthy of notice.

Enteric fever, though announcing itself in the most stormy manner, may run a benign and rapid course towards recovery.

CASE I.—An Englishman, aged 24, who had frequently suffered from malarious fever in different southern ports. Seen on the 4th day of an illness contracted up country, which had begun with violent headache, prostration, sleeplessness, loss of appetite, and dry loaded tongue. No rigor and no sweating. Had been largely dosed with quinine. Subdelirium on the 3rd night.

When seen, in early morning, the temperature was 103°.8; it rose to 104°.8 about 9 P.M. The abdomen was distended, very sensitive; no gurgling could be made out. The spleen could be distinctly felt, and palpation was painful. No ascertainable liver enlargement. Bowels constipated; relieved of extremely fetid stuff by enema. After this the stools were liquid, yellow with considerable deposit. Tongue very dry and hard in centre with thin brown fur; edges red. Skin yellow. Pulse 90, remarkably soft. Cardiac action extremely weak and occasionally intermittent. Next morning (5th day) the pharynx was deeply congested; there was slight dysphagia. Cough with mucilaginous frothy expectoration. Sleeplessness; delirium; increased tympanites and tenderness. Temperature in morning 103°, at night 104°. The symptoms then began to abate, and by the 8th day convalescence was established.

CASE II.—Dane, aged 35. Several attacks of malarious fever. Illness began with rigor, heat and sweating after a severe drenching. Dosed himself with antipyrine, quinine and purgatives. Had fever every day from beginning, and noticed little difference in its intensity at different hours. Sleepless, no delirium. Intense frontal headache on 5th day, which persisted without intermission through the following night. Urgent thirst. Drinking large quantities of milk.

When seen on the 6th morning, his skin was dry and a dirty yellow; there was much subsultus on attempting to grasp an object; the tongue was dry; there was no incoherence. The temperature was 104°.6; it rose to 105°.7 at noon, and to 106°.2 at night. Respiration 30 (48 at night), superficial; nothing discoverable in chest. On the 7th day the stools were frequent and characteristic. The temperature remained elevated, and the other symptoms but little changed until the 9th day, when convalescence suddenly set in. On the evening of the 8th day, after the temperature had been high for several days,

and had indicated on at least one day what might be called hyperpyrexia, there was a very marked accentuation of the second sound in the tricuspid area, the more remarkable as the other cardiac sounds were feeble and distant. This had disappeared when the heart was re-examined two days later. On the 8th and 9th days slight fugitive ecchymoses appeared on the arms. These vanished after a couple of hours, but only to appear again, hardly ever in the same place. The change of position was ascertained by surrounding each patch with ink. Iliac gurgling was distinct on the 7th day. On the afternoon of the 9th day there was a long and profuse sweat, after which every symptom, except intense weakness, at once disappeared.

In this case EHRLICH's test gave no reaction. On adding the ammonia to the shaken-up liquid in the test tube an opalescent ring was formed. After 24 hours there was a slight violet or purple deposit.

CASE III.—Englishman, aged 25. Three days ill with prostration, headache, sleeplessness, foul tongue, loss of appetite. Thinks he is delirious at night. Temperature on 4th morning 104°; in evening 104°.5. Abdomen tympanitic. Characteristic stools (four). No spots, tenderness or gurgling. Deafness and stupor on 6th day, temperature varying between 102° and 104°. Pulse 100 to 110, dicrotic; pupils dilated. Delirious; violent at night until the 8th day. Typhoid stools until the 11th day, when convalescence set in.

It is but seldom that we come across the "ambulatory typhoid" in which a patient goes through the entire, or nearly the entire, course of his fever without suspecting that there is anything wrong with him. The following histories describe conditions approaching this:—

CASE I.—Mercantile assistant, aged 29. Accidentally observed in his office, where he had been working in the usual way for the usual number of hours daily. He looked extremely ill, but said that beyond sleeplessness there was nothing the matter with him. Sent to bed. Temperature at noon 104°. Stools liquid, frequent, black from iron which he had been taking freely on his own account. Three rose-coloured spots on abdomen; much tenderness, distinct gurgling, tympanites. At night temperature 102°.4; wandering. Tongue dry, yellow, red tip and edges. Spots continued to come out, and the fever followed the course usual in the third and fourth weeks. Convalescence was established on the 12th day after treatment began. When, after five days, the stools lost their black colouration they were seen to be typical.

In this case sudden death might have occurred. The circulation was feeble and intermittent when the patient was first seen, and on the following day he had a paroxysm of cardiac failure with dyspnœa, extremely rapid incomplete cardiac contraction, pallor and cold sweat, which would probably have terminated fatally had it come on while he was sitting at his desk.

CASE II.—A lady recently arrived in Shanghai; phthisical family history on both sides. Shortly after her arrival she went on a long sea trip, in the course of which she caught cold. This was speedily followed by "break-bone pains," occasional vomiting, yellow diarrhœa, sore throat, distension and tenderness of the abdomen. Her skin was always hot, often pungent; she slept badly, and talked in her sleep. Complete anorexia. After 10 or 12 days, frequent starting of the muscles of the limbs was observed. Meanwhile she went about at each port that she visited, inspected curio shops, and took much exercise. She swallowed a great deal of quinine.

On her return to Shanghai, probably about the 18th day of her illness, her tongue was dry and irritable, all the papillæ largely developed. Her gums were spongy. There were a number of minute herpetic ulcers on the mucous membrane of the lips. Her skin was dirty-yellow; lips pale. The abdomen was slightly distended, uniformly sensitive. Severe cough, with frothy tenacious expectoration. The temperature was 101° (7 A.M.), and rose to 104°.3 at night. For 12 days a fever temperature was maintained, after which convalescence was established. The morning temperatures ranged between 100° and 103°.5 for 11 days, and the night temperatures between 101°.4 and 105°.2. The stools were characteristic, and all the symptoms indicative of the third and fourth weeks of ordinary enteric fever. It

may be noted that the catamenia appeared normally during the second week, and that they reappeared a fortnight after convalescence. A tendency to drag on with slightly elevated night temperature (100°) was speedily checked by the administration of quinine.

True relapse of enteric fever, by which I mean a fresh outburst some weeks after complete convalescence, is, so far as my experience goes, one of the rarest events here. The patient whose case has just been mentioned offered an instance of it.

Enteric Fever. Relapse after six weeks. Recovery.—Forty-two days after the last record of a fever temperature she began to experience loss of appetite, rapidly increasing weakness, sleeplessness and diarrhœa. This lasted for five days, and I saw her on the 6th day. Her morning temperature was 102°.5; evening temperature 104°. Stools nearly watery; yellow, fetid. Tongue normal. Abdomen distended. Slight tenderness to percussion in hepatic region. Distinct gurgling. The temperature ran as follows (falling at night for three days):—

6th to 10th day	Morning range	102°.3 to 103°.7	Evening range	103°.4 to 104°.4
11th „ 13th „	„ „	100°.8 „ 102°.8	„ „	103°.8 „ 104°.1
14th day	Morning temperature	103°.5	Evening temperature	102°.8
15th „	„ „	102°.4	„ „	98°.2
16th „	„ „	101°.5	„ „	100°.9
17th to 22nd day	Morning range	98°.4 to 99°.8	Evening range	98°.4 to 101°.1

The course of the relapse was thus exactly three weeks. The patient was deaf and occasionally delirious. Dilated pupils throughout. Two rose-spots were discovered on the 10th day. All through there was excessive perspiration. The tongue varied from normal to extreme dryness. The catamenia lasted from the 3rd day of the fever to the 13th. Diarrhœa was characteristic. There was intense prostration; congested pharynx; cough; headache; horrible visions. Convalescence was established at the end of the third week.

The chronic "seediness" which is occasionally the reward of habitual drinking may mark the onset of enteric fever; loss of appetite, sleeplessness, horrible visions, foul tongue, thirst and deranged bowels, with perhaps mucous or bilious vomiting, being regarded as natural incidents, and giving rise to no suspicion of their special significance.

Case I.—Clerk, aged 22. Shivering and one distinct rigor, intense headache, sleeplessness, "dreamy states," paroxysmal sweats, excessive bladder irritability, anorexia, urgent thirst. Bowels irregular for several days. Stools now liquid, yellow, fetid; frequent. Had been drinking and otherwise dissipating for a fortnight or three weeks, and had lost his employment in consequence. He attributed all his symptoms to his imprudences, and sought advice because he thought that he was about to have an attack of delirium tremens. On what I assumed to be the 8th day of his illness, I found the hepatic and splenic regions hypersensitive, the liver extending downwards for an inch below the costal arch, and the left lobe specially painful to percussion. The spleen could be distinctly felt, but the increase in its size was not great. Tongue white, dry, red tip and edges. Pulse, small and soft, 104. Temperature at 2 P.M. 103°. Cough with mucilaginous expectoration; respirations 24. Distinct tenderness and gurgling in the cæcal region. No spots. Sent to hospital.

The disease proved severe. Spots appeared on the 11th day. The most distressing symptom was intense frontal headache with photophobia, which persisted until the middle of the third week. All through the disease the patient was very tremulous; after the 16th day he was stupid, and on the 40th day he became deaf. He did not become distinctly delirious until the 43rd day; he was muttering on the 44th day, with much subsultus; inclined to be violent on the 45th day. After this he did not wander. His pupils were dilated and insensitive from first to last. Sweating was profuse; there was one severe and prolonged rigor on the 11th day. The temperature was rarely under 102°, and often approached

105°, until the 36th evening, when it reached 105°.1; it then gradually fell, and first reached normal on the 48th day. There were occasional paroxysms of bladder irritability. Tympanites was never very marked. The stools were characteristic. Among many serious complications was ulceration of the pillars, soft palate and back of the pharynx, which made its appearance on the 10th day, and slowly spread over the hard palate, superficial sloughs being thrown off, and profound gangrene seeming imminent for several days. On the 22nd day an abscess was found in the scrotum at the root of the penis. This was incised and dressed antiseptically, but a deep slough formed, and the urethra was seriously threatened. Intestinal hæmorrhage occurred on the 22nd, 23rd and 24th days, about 60 ounces of blood, liquid and coagulated, being lost. Recovery however was complete, and there were no sequelæ.

CASE II.—Frenchman, aged 23; clerk. Similar history of constant debauchery. Sleeplessness, horrible dreams, anorexia, fetid diarrhœa, all attributed to natural disturbance of health in consequence of drinking. Seen about the 16th day. Intense prostration, rose spots, tympanites, deafness, stupidity, night delirium, typical diarrhœa. Dicrotic pulse. In this case the course was more benign. The temperature varied round 104° at night, and between 102° and 103° during the day until the 21st day. There was hardly any iliac tenderness, but pressure in the umbilical region was exquisitely painful. This tenderness lasted for a week and then disappeared spontaneously. The stools continued characteristic until the 31st day. There was a severe nasal epistaxis on the 23rd day. Apart from this, no complications. No sequelæ.

Sloughing of the scrotum has been observed in cases of profound malarial intoxication.* Ulceration ("small, circular punched-out ulcers, healing rapidly") of the soft palate, rarely of the posterior wall of the pharynx, is given by CAHN of Strassburg (under KUSSMAUL's guidance), as important for the diagnosis of typhoid.† It must very seldom be necessary to have recourse to this symptom for the purpose of strengthening a diagnosis. It is, however, important to note that ulceration of the upper end of the digestive tract may in typhoid prove in itself a source of danger.

In many of the cases detailed I have mentioned the occurrence of a soft systolic bruit, heard equally at the apex and base of the heart, appearing usually about the end of the second week and lasting until convalescence is fully established. I do not purpose here to consider the organic cardiac complications of enteric fever. This subject was exhaustively treated by HAYEM in 1875.‡ The bruit to which I refer indicates no valvular mischief, and is doubtless due to toxic interference with the innervation of the heart and degenerative changes in the cardiac muscle, manifesting themselves by irregular contraction. It has, however, given occasion to an erroneous diagnosis.

CASE.—*Enteric Fever. Muscular Bruit mistaken for an indication of Pericarditis.*—In October 1875 I was in attendance on a Japanese, aged 24, who was passing through an attack of typhoid fever of average severity. The bruit to which I refer, and for which I had been searching, became audible on the 14th day. The patient's friends, probably impressed and made apprehensive by the frequent examination of the heart region, surreptitiously consulted an eccentric practitioner whose career in Shanghai was neither brilliant nor prolonged, but who had I understand passed through the usual training of a large London hospital. He denounced the diagnosis of typhoid fever, pronounced the disease to be pericarditis, and gave a fatal prognosis unless the patient was "at once put on mercury pushed to salivation and a large blister "was applied to the præcordia."

Presumptuous ignorance pushed to this extent is fortunately rare. But the story shows that mistake is possible, especially should no sufficient attention be paid to the history of each

* References in *London Medical Record*, 1886, p. 151. † *Berliner klinische Wochenschrift*, 1886, p. 217.
‡ *Leçons cliniques sur les manifestations cardiaques de la fièvre typhoïde.*

case. Nor is the accurate diagnosis of typhoid fever merely a matter of scientific nicety. In the case just related the heroic treatment recommended would in all probability have proved speedily fatal, just as many typhoid cases have undoubtedly died poisoned by quinine, and in later days by antifebrin.

Parotid bubo presenting itself as a complication is usually of fatal significance. Subcutaneous abscesses in various parts of the body are not infrequent, as is well known, and however long and tiresome the series of such collections may prove they are hardly ever of grave import. Even in the rare instances when abscesses, due to the degeneration of ZENKER, form in the substance of muscles, recovery has been the rule.* But MURCHISON † reports losing five cases out of six in which parotid bubo appeared, and quotes TROUSSEAU to the effect that a case scarcely ever recovers when pus forms in the depths of the parotid gland. Recovery is certainly very uncommon. In recent literature I find but one case so terminating recorded.‡

The patient was a boy of 7 years. About the 16th day inflammation of the left parotid region declared itself, with gangrene of the skin below the right angle of the mouth. Sanious pus evacuated by deep incision six days later. Submaxillary bubo of right side terminating in resolution.

A case of recovery from sequential "cellulitis of the neck" is reported in the same journal.§ From the anatomical description given this would appear to have been a parotid bubo which ended in resolution after division of the fascia over the gland.

CASE.—*Enteric Fever. Bubo in each Parotid. Recovery.*—A lady, aged 23, recently married. Usual series of symptoms. Sleeplessness, headache, articular pains, prostration; hurried respiration, slight cough with expectoration of bronchial mucus; pulse soft, rapid, dicrotic; dry loaded tongue, nausea, anorexia, thirst, diarrhœa, abdominal distension, hypersensibility in cæcal region; temperature varying between 102° in the morning and 104°.6 at night. There was an initial rigor, and paroxysms of sweating were frequent subsequently. Deafness was an early symptom (5th day). There was much drowsiness, the patient dozing for hours at a time with her eyes half open. Delirium and subsultus on the 6th day. When fully awake she complained bitterly of paroxysms of intense pain starting from the shoulders and radiating to her finger-tips, being particularly severe in the elbows. The elbows were red, very sensitive to pressure, but there was no effusion into them and motion was free. Constant purging of characteristic fluid. Occasional epistaxis. At the end of the first week the lips were cracked, teeth covered with sordes; face flushed purple; very stupid; breathing superficial and laboured with much expansion of the alæ nasi, profuse secretion in the tubes, hardly any cough; right heart overfilled.

At this stage, as suffocation appeared imminent, I administered a sulphate of zinc emetic, which brought up an incredible quantity of mucus, and, followed by a large draught of champagne, changed the immediate aspect of affairs. In such urgent cases the risk of collapse after the vomiting must be anticipated and faced.

After the 10th day the temperature fell, but the nervous symptoms were unabated. She was always restless, and the delirium was occasionally wild. Her sense of smell became extraordinarily acute. Severe occipital pain. Great abdominal distension, but very free escape of flatus. On the 14th day she was vermin-hunting, and a crop of purpuric spots came out on the buttocks. Her pulse was now running. Cramps of leg muscles. Constant shouting; all sorts of fancies as to where she was. On the 15th day she complained of severe pain behind the jaw on the left side, and a deep-seated hard swelling, very sensitive to pressure, was detected there. Her temperature rose next morning to 103°.5. Left side of neck now brawny. A similar swelling forming on the right side.

* For references, see *Progrès Médical*, 1886, p. 1067.

† *The Continued Fevers of Great Britain*, 2nd ed., p. 583.

‡ *Lancet*, 1879, ii, 909.

§ *Lancet*, 1889, ii, 998.

All this time the stools were frequent and typical. There was no cardiac bruit.

On the 18th day the stools were frequent, fetid and passed unconsciously. On the 19th there was a severe rigor followed by sweating. An exploratory incision under local anæsthesia gave exit, at what appeared to be a considerable depth (the tissues overlying the gland being however much thickened by œdematous infiltration), to about 6 drachms of bloody and curdy pus, with one or two minute sloughs. During the following days, under frequently renewed poultices of very fine oakum freshly carded from new Europe rope and wrung out of boiling water, the skin being protected by a thick layer of boracic ointment, there was a profuse discharge of pus, which speedily assumed a healthy character. Three days after the evacuation of the abscess on the left side deep fluctuation was detected in the right parotid swelling. This was incised and similarly treated, the pus from this second abscess being creamy. By the 38th day the incisions had closed, and convalescence was established.

In a long experience of enteric fever the case just summarised was the most menacing that I have ever known to terminate in recovery.

Among the rarer sequelæ of enteric fever are affections of the eye. MURCHISON casually mentions sloughing of the cornea, attributing it to arterial thrombosis. In the following case ulceration was probably merely a local sign of general malnutrition.

Enteric Fever. Marginal Corneal Ulcers. Recovery.—A Chinese dyer, aged 39. For a fortnight had had frequent, liquid, yellow, generally fetid stools; red, baked tongue; pungent heat of skin; wasting, muscular weakness; sleeplessness, stupor and night delirium. There had been no rigor or sweating.

On admission the tongue was raw, furred, dry. Intense headache, photophobia, insensitive and slightly dilated pupils. Two rose spots on abdomen. Stools frequent, typical. Abdomen swollen, marked tenderness in cæcal region. Pulse rapid, feeble, dicrotic with occasional intermittences. Suitable nourishment rapidly improved the condition. On the 26th day a small ulcer was observed at the outer edge of the left cornea, followed by three more a few days later. All four healed slowly, and the eye had not completely recovered until three weeks after the appearance of the first ulcer.

That enteric fever may run its course, and even a severe course, with very slight elevation of temperature or with none at all is well known. Cases of this kind are, however, rare. A more important observation is that in the course of an attack the temperature curve may vary between very wide limits while the general symptoms show no improvement in correspondence with the lower readings of the thermometer.

Enteric Fever. Moderate or normal Temperatures. Severe Symptoms. Recovery.—A Japanese, aged 24. Ill five days when first seen. The usual group of symptoms was present. Up to the 14th day the temperature never reached 104°, and was rarely over 102°. The highest reading for the 24 hours was in this case, as in most others, always registered about 6 P.M., the descent for the night beginning between 6 P.M. and 9 P.M. After the 14th day the temperature was normal or subnormal. But the patient was for nearly three weeks perfectly deaf and either stupid and indifferent or wildly delirious; he hardly ever slept; his stools were indescribably fetid, and his abdomen enormously distended. The bases of both lungs were solid for 10 days. He refused wine and was fed only with the utmost difficulty. On the 28th day, when the temperature had already been normal or slightly below normal for a fortnight, convalescence suddenly set in, without however any critical phenomenon, and recovery was speedy.

In several cases of enteric fever occurring among females, detailed in this and previous Reports, it has been incidentally noted that the catamenia are not arrested or materially affected by even the severest forms of the disease. In one case where the attack came on during the period of lactation and nursing was continued (against advice), the child appeared sufficiently

nourished and certainly received no injury. The following case shows that pregnancy at an early stage is not necessarily disturbed by enteric fever:—

Enteric Fever. End of second month of Pregnancy. Pregnancy undisturbed.—Patient had suffered severely from Tamsui fever. When seen her temperature for several days had not been below 101°. Vomiting, anorexia, foul tongue; dry pungent skin; headache, lumbar and joint pain, sleeplessness. Temperature (afternoon) 103°.5. This was supposed to be the 5th day. Diarrhœa, yellow and flocculent, occurred on the 7th day, and persisted. Muscular pains of extraordinary severity formed the most distressing symptom. There was but slight tympanites; no spots; but there were distinct tenderness and gurgling in the cæcal region. The highest morning temperature recorded was 102°.4 on the 8th day, and the highest evening temperature was 103° on the 7th day. The temperature did not fall to normal until the 27th day. At this time pregnancy was not suspected. The catamenia had been absent for two months, but as they had frequently been irregular on previous occasions no particular attention was paid and the fact was not mentioned. However, 230 days from the beginning of the fever a mature child was born. Pregnancy therefore dated from 50 days before the patient fell ill.

It would naturally be supposed that enteric fever attacking a person already advanced in phthisis would run a severe and probably fatal course. This, however, has not been my experience. In fact all the cases which have come under my care with this combination have by a singular chance terminated favourably.

CASE I.—*Enteric Fever, occurring during the third stage of Phthisis. Intestinal Hæmorrhage. Recovery.*—Patient (female, English, aged 28) seen 20th October 1875, on what was supposed to be the 8th day of her illness. She is a fragile woman, with salient cheek bones, flushed cheeks, fair hair and complexion, ill-formed teeth, sunken chest, atrophied mammæ, clubbed finger-tips. Has had two children, both alive but delicate; one four years old, the other two years. She nursed each for only a few weeks, when her milk failed without any breast trouble. Five years ago she had severe hæmoptysis, which lasted for a month, and was followed by a long period of purulent expectoration. She recalls rather indistinctly a similar sequence of events several years before, when she was a child. Ever since the last attack of hæmoptysis she has coughed, expectorated purulent lumps, and sweated at night. She has very slowly wasted, losing a few pounds every year. The catamenia since the birth of her last child have been irregular as to quantity, regular as to recurrence. Anorexia. Constipation.

Her father and one sister died of phthisis at an early age.

Her present illness began about a week ago with constant high fever, quiet night delirium, and almost absolute sleeplessness. She speedily became extremely prostrate. Excruciating frontal headache; photophobia. Lightly tapping the head anywhere exasperates the headache. Pupils dilated, sensibility to light apparently diminished (only a very dim light could be used). She has a short hacking cough, and profuse yellow, frothy, fetid diarrhœa, which came on after a seidlitz powder taken two days ago. This afternoon (8th day) there was a profuse discharge of bloody fluid from the bowel. She is constantly retching.

There is no uterine trouble. The heart is apparently healthy as regards the valves, but there is a faint muscular bruit at the apex and base. The pulse is distinctly dicrotic. The liver and spleen are of normal size, and neither is tender on palpation. Marked tenderness and gurgling in the right iliac fossa, and the supra-pubic region is also very sensitive.

The lungs are uniformly dull in front. There is a deep depression under the left clavicle. The chest hardly expands in the least on the deepest inspiration. Respiration being almost exclusively abdominal causes so much distress that it is voluntarily slowed. Percussion is clear behind on the right side, between the scapula and the spine. Respiration is puerile over the upper part of the right back,

tubular elsewhere. Posteriorly the whole left chest is wooden, except over a small area corresponding to the spine of the scapula; here there is gurgling.

The heart sounds are not audible in the right back, but are intensified in the left axilla. True vesicular murmur is not to be found anywhere. Respiration is tubular over the greater part of both fronts, with small scattered areas of absolute silence.

In spite of this unfavourable condition the fever ran an average course. Prostration was extreme. The temperature rose to 105°.8 on the 10th night, and was 104° on several mornings; but there was generally a daily interval between 10 A.M. and 2 P.M., when it fell to about 100°. Delirium was occasionally violent, with very severe headache. Dysuria was distressing from the 11th to the 13th day. On the 10th day continual twitching of the lower facial muscles on both sides was observed. This ceased on the 12th day. Rose spots appeared in successive crops after the 12th day. On this day also the catamenia appeared (due date), and lasted until the 15th day, the discharge containing several black clots. The temperature fell to normal on the 26th day, and did not again rise. A fortnight later it is noted that the myocardial bruit had almost disappeared. The condition of the chest was unaltered. Patient was eating and sleeping well.

CASE II.—*Enteric Fever in course of Phthisis. Syphilis. Intestinal Hæmorrhage. Pneumonia. Recovery.*—Marine engineer, aged 28. Patient comes of a phthisical family. In June 1884 for the first time spat blood, and ever since has been much troubled by cough with muco-purulent expectoration. He sweats much in the early morning. He is gradually but very slowly losing weight. There is consolidation at both apices. In August 1884 he contracted syphilis, followed in November by a roseolar eruption, which was accompanied (at another port) by an attack of "typho-malarial fever" which laid him up for two weeks. Apart from the eruption just mentioned, he has had no constitutional symptoms of syphilis.

Seen 19th March 1885, supposed to be the 6th day of an illness characterised by sleeplessness, severe headache, pungent skin, intense prostration, white tongue with red dry tip and edges, meteorism, abdominal sensitiveness, not localised; and yellow, slimy, fetid diarrhœa. The temperature ran high—103°.4 on the 12th morning, 105° on the 11th evening. It averaged 102° in the morning and 104° at night for the first 17 days, when there was a sudden fall to normal, which persisted until the 21st day, accompanied by remission of all the symptoms. Severe intestinal hæmorrhage on the 8th day, controlled by sulphuric lemonade. Bleeding did not recur. The pulse and temperature were alike unaffected by the hæmorrhage, the pulse being throughout full, soft and under 100 in frequency. The stools were characteristic; there was much quiet delirium; spots appeared on the 12th day. On this day also there was a slight discharge of pus from the umbilicus, the source of which was obscure. Tympanites was distressing, but abdominal tenderness disappeared early. On the 11th day the tongue and muscles of the limbs became tremulous. On the 10th day the patient was troubled with cough, and expectorated some frothy mucus streaked with blood. Previous to this day and after it until the 21st the lung symptoms appeared to be in abeyance.

On the 21st day, when everything promised speedy convalescence, dyspnœa came on suddenly, with livid lips, scanty, blood-stained expectoration, and dry tongue. The base of the right lung up to the angle of the scapula was absolutely dull. Breathing tubular; no respiratory murmur. Respiration 36; pulse 120; temperature 104°, about which it remained for seven days, rising to 105°.2 on the 3rd night. On the 2nd day of the pneumonia a very large quantity of bile was vomited, with notable relief to the breathing. There was now slight splenic enlargement and tenderness, but no notable enlargement of the liver. The expectoration was characteristic. On the 8th day the lung had cleared, and from this out (28th day of the illness) convalescence was uninterrupted except by violent cramps in the left calf muscles, which persisted from the 37th to the 39th day.

The complication with pneumonia is tolerably frequent, but not specially fatal. It was menacing in the case just detailed, but rather on account of the phthisical and syphilitic history of the patient.

Enteric Fever. Pneumonia. Severe nervous symptoms. Recovery.—Englishman, clerk, aged 32. Ailing for about 10 days. Sleepless, severe vertical headache, muscular pains, prostration; anorexia, brown baked tongue with red tip and edges, frequent bilious vomiting, yellow diarrhœa. For the last four days the stools have contained blood. Coughing.

Seen 2nd January 1876, assumed to be the 10th day of the illness. At the base of the right lung is an area about the size of the palm of the hand absolutely dull. It is with difficulty that the patient can be got to draw a long breath; when he does crepitation is audible. In the centre of the patch crepitation is coarse, finer towards the margins. At the edge of the dull area respiration is tubular. Marked immobility of right side. Patient cannot lie on the left. Sputa rusty.

Half a dozen rose spots round umbilicus. Gurgling and tenderness in right iliac fossa. Tongue as above described. Pupils medium, sluggish. Much muscular tremor. Respirations 40; pulse 100; temperature (4 P.M.) 103°.

The pneumonia was severe. Respiration varied between 40 and 50; pulse between 100 and 130 (on the 16th, 17th and 19th mornings falling to 84, 96 and 96 respectively, the corresponding breathing rates being 46, 40 and 48); temperature between 100° and 103°.8 in the morning, and between 101° and 105° at night. On the 16th and 22nd mornings the temperature fell for a couple of hours to normal, without any corresponding general improvement. Paroxysms of sweating were severe and frequent. On the 12th day about 2 ounces of pure blood was expectorated, and it is noted on the same day that the stools were like "meat-washings." Delirium, muttering, subsultus and indifference from the 13th day; fly-catching on the 21st day, when also he had a prolonged rigor. Pulse hyperdicrotic. On the 15th day it is noted: "Base of right lung completely solid; unconscious of dyspnœa; pupils widely dilated and "insensitive; muttering delirium during semi-sleep; very distinct myocardial bruit."

Meanwhile the enteric fever pursued its course. The stools were frequent and characteristic; there was distinct gurgling on palpation in the cæcal region; whether there was tenderness or not could not be ascertained. On the 17th day the following note was taken: "Is constantly drowsy, but can hardly "be said to sleep. Constant starting of legs. A touch on either sole causes a jump as though a shock "from a battery had been given." A fresh crop of rose spots came out on the 18th day, the former having faded. There was great abdominal distension. The heart's action became extremely feeble towards the end of the third week. On the 23rd day crepitation was again audible, and on this day there was a considerable loss of blood from the nose. After this all the symptoms abated. Delirium persisted to the 30th day, but by the 32nd day convalescence was established.

The following case is a purely typical one, occurring in a young subject recently arrived, advancing without complication, but with almost every ordinary symptom, to a favourable issue at the end of the third week. It represents the natural course of the disease when the patient is placed amid favourable surroundings, for, after stopping quinine, treatment was limited to a carefully regulated diet, sponging with tepid water and vinegar, the administration of a few chlorate of potassium lozenges, and an occasional enema.

Enteric Fever. Natural course. Recovery.—A young English girl, aged 15½; recently arrived in Shanghai. Ailing for a week with sleeplessness, articular and muscular pain, "stitch" in left side of chest, frontal headache, intolerance of light; anorexia, foul tongue, yellow diarrhœa, sore throat; pungent skin. She had been delirious during the night previous to summoning advice. Had had 10 grains of quinine every day, administered in amateur fashion.

Seen 8th May 1885, supposed to be the 8th day of the disease. The morning temperature was 102°; afternoon, 104°.5; evening, 105°. Face flushed. Spleen tender; could just be felt on deep palpation. No hepatic enlargement or tenderness. Heart healthy. A few disseminated moist râles over posterior surface of both lungs. Tongue brown, moist. No spots. Slight gurgling in cæcal region; no marked tenderness. Pillars and back of pharynx much congested; on each side behind the posterior pillar there is a raised congested patch, only a part of which is visible, which appears to be the main cause of the throat trouble. Stools characteristic.

There was great prostration throughout. A very faint myocardial bruit was audible from the 10th day to the establishment of convalescence. The pulse was soft and lingering, varying in frequency from 78 to 100; dicrotic after the 12th day. Patient was delirious from the 10th to the 20th day; very deaf and stupid from the 10th day onward. The pupils were dilated but sensitive after the 12th day. From the 16th to the 19th day there was general muscular tremor, with subsultus from the 18th to the 21st day. There was no rigor. Sleep was variable, but a fair amount was obtained, mostly disturbed by visions. Cough was troublesome for a few days; on the 10th she expectorated some blood-stained mucus with marked relief, and on the 12th day she had a paroxysm of hurried breathing without dyspnœa, lasting for a couple of hours, during which the respiration rose to 40. There was nothing discoverable in the lungs beyond slight bronchial catarrh to account for these symptoms. The condition of the tongue varied; it was sometimes brown and dry, occasionally normal. The lips were cracked, and sordes collected on the teeth on the 11th day. On the 10th day an ulcer appeared on the congested patch on the left side of the pharynx and spread for two days, causing some dysphagia. It had healed by the 17th day, and the patches disappeared shortly afterwards. Thirst was urgent. There was complete anorexia until the 15th day, when appetite began to return. Paroxysms of sweating were frequent. The eruption appeared in two crops, on the 10th and 13th days respectively. From the 11th day out the skin was covered with sudamina. The stools were characteristic up to the 17th day; horribly fetid, but occasionally solid between the 11th and 18th days. No intestinal hæmorrhage. There was slight tympanites, which first declared itself on the 10th day. On the 14th day the abdomen was rather excavated. There was no vomiting; splenic tenderness persisted to the end of the illness, and once or twice slight hepatic sensitiveness was complained of under percussion. There was no ascertainable enlargement of the liver. Gurgling was present from the first in the cæcal region, and from the 10th day onward there was some sensitiveness. Her hair began to fall out on the 11th day, and had become very thin before the illness terminated; six months later it had grown luxuriantly. For a week after convalescence was established she suffered severely from aching in the soles of her feet and cramping pains in the joints of her fingers and toes. After her recovery her memory was a complete blank with regard to the earlier and middle periods of her illness. The following abstract indicates the range and course of the temperature:—

8th to 15th day.—Max., 105° on 8th morning and 11th forenoon; min., 100°.2 on 15th morning. The temperature was generally close to 104° between 11 A.M. and 3 P.M.

16th to 19th day.—Max., 103° on 18th afternoon; min., 98°.4 at 11 A.M. on 16th day. During this period there was a fall of one or two degrees at night.

20th day.—Max., 103°.4 in the afternoon, after a saline laxative, which stirred up and brought away a quantity of putrid fæces. Temperature normal all through forenoon and at night.

After the 22nd day the temperature remained permanently normal.

So far as my experience goes, enteric fever is rare in young children. I hear of many cases, just as I hear of many cases of diphtheria and of sprue, terminating of course in recovery, but I see hardly any. Malarious fevers, fever from indigestion, from worms, from exposure to heat, occasionally fever of purely nervous character, are all common enough among children, and no doubt explain many marvellous recoveries from typhoid within a week or 10 days. But when genuine typhoid does attack a young child and runs its normal course of three or four

weeks, it often leaves after it a condition of deep anæmia with dyspepsia, bowel irregularity, fetid stools, and a tendency to moderately high temperature towards evening, which last almost indefinitely. Here quinine, or quinine with arsenic, alcohol and gentle saline purgatives, with frequent sponging with hot diluted vinegar, are more effectual than even change of air, which often completely fails to restore health. Iron is, I think, seldom of any use and is often injurious.

CASE.—A girl, aged 7; recently arrived from England. Had had a three weeks' illness at another port, diagnosed as "typho-malarial fever." The symptoms described clearly indicated typhoid. She had lost 8 lbs. during her illness. After a fortnight's change to Chefoo she was brought to Shanghai. Her lips and gums were pale, conjunctivæ pearly, finger nails dark; she was made breathless by slight exertion, and complained of much cardiac distress. Her pulse was 132. She slept badly. Her stools were frequent; sometimes small, always fetid, generally pulpy, but occasionally watery. They were yellow or light brown, and often contained bits of undigested food. Her tongue was moist, but brown and loaded. She had a short dry cough. The child complained chiefly of occasional vertigo, of constant aching in all her muscles, and of absolute disgust for food. There was nothing to be detected in the lungs; there was a faint systolic cardiac bruit heard equally well at base and apex, not propagated into the axilla. There was no hepatic enlargement, but the spleen was easily to be felt and was distinctly tender. During the first three days her temperature varied in the morning between 97°.8 and 99°.3; at noon between 99° and 100°.5; and at night between 101°.9 and 103°.5.

Under the treatment above indicated she had begun to sleep perfectly well by the 4th night, and on the 5th day appetite is noted as voracious. On the 10th day colour had returned and the child seemed well, the night temperature however still reaching 100°. On the 12th day treatment was discontinued. The temperature did not rise above normal after the 10th day, and a week later the patient returned home in perfect health.

Systematically arranged in this Report and in that which immediately preceded it, as well as scattered through previous issues, there are now in print descriptions fully illustrative of, I believe, every form of enteric fever encountered in China. These records are the *pièces justificatives* upon which is based the clinical study of enteric fever which closes this volume.

CLINICAL STUDIES OF DISEASE AS OBSERVED IN CHINA.

CHAPTER IV.

ENTERIC FEVER.

Definition and History.

I would define Enteric Fever as an acute disease of the entire economy; infectious but not contagious; presenting all degrees of severity; of uncertain duration; characterised by fever of remittent character, early and remarkable depression, nervous disturbance, rapid wasting and muscular degeneration, and by an infiltration of glandular tissue throughout the body with multinucleated cells, which speedily advances to complete granular or fatty disintegration in a larger or smaller number of the agminated and solitary glands of the intestine and of the glands of the mesentery.*

It is in the fact that enteric fever is a disease of the whole body—that is, that all the systems of organs corresponding respectively to the various functions of life are obnoxious to the influence of its cause, whatever that may be—that we find an explanation of the variability in its symptoms which is so great as to suggest the existence of several distinct forms of disease agglomerated under the single name of enteric fever. For reasons altogether unassignable, but such as we see illustrated every day in other sequences of events, the stress of the poison falls in different cases upon different sets of organs and with different degrees of intensity.

Twenty-five years ago the majority of the older practitioners at the open ports in China threw doubt on the existence of enteric fever among foreigners. They rarely if ever made a postmortem examination, and experience had so deeply impressed them with the multiformity of malarial manifestations, that no phenomenon of disease, however curious and unexpected, seemed incapable of being reasonably referred to malaria as its cause. Hence the wide and constant prevalence and the heavy mortality of what was called remittent fever; for faulty diagnosis led to faulty treatment, and quinine was lavished on cases where its action must have been distinctly hurtful. Nor unfortunately have mistaken views regarding this important matter altogether died out. A very few years ago a Shanghai resident contracted at another port what was diagnosed as "typho-malarial fever," but which from the description given was certainly enteric, during which there were intense prostration, delirium, and subsultus; tympanites, gurgling, and iliac tenderness; and which proved fatal. The diagnosis, when

* The description of enteric fever which follows may possibly be in many respects defective, for it is neither more nor less than an abstract from a multitude of case sheets and postmortem reports which have accumulated under my hands during close on a quarter of a century. Whatever I have not seen myself finds no place in it. But lacunæ which would be inexcusable in a didactic treatise are almost inevitable in pages whereof the sole object is not to teach but to contribute to the raw material of teaching.

challenged after the event, was reaffirmed on the ground that "as there were no spots and as the stools were sometimes brown the disease could not have been typhoid." The patient swallowed between 60 and 70 grains of quinine daily for more than a fortnight, a treatment certainly in nowise calculated to further recovery.

There has been a similar history in India, where enteric fever first appeared in the statistical returns of the diseases of British troops in 1870.

Yet the disease was recognised and its origin discussed by the medical officers serving with the British troops in China in 1859. During the years from 1861 onward scattered cases of enteric, some of which, it must be confessed, were diagnosed as "typho-malarial" or "mixed" fevers, but in any case not as remittent, were observed in Newchwang, Tientsin, Peking, Chefoo, Chinkiang, Kiukiang, Ichang, Shanghai, Ningpo, Foochow, Amoy, Swatow, Canton and Hoihow;* that is to say, everywhere from end to end of the coast of China; but at least up to 1875 they were regarded as rarities, and to none of the fatal cases was any report of postmortem examination appended until September 1884, when Dr. RENNIE, of Foochow, published† a brief account of characteristic lesions found by him. Since then the morbid appearances have been frequently described. In the earlier days the remarks on fevers inserted in the reports of missionary hospitals for natives were meagre in the extreme, and betray an absolute confusion between enteric, severe remittent, and the form of typhus described in the last chapter. Notwithstanding this, in the lists of diseases treated appended to these reports "typhoid fever" frequently appears, as though the form were perfectly defined in the minds of the reporters. Thus, 75 cases of typhoid fever are entered without any remark in the list given for 1861 by the medical officer of the London Missionary Society's Hospital at Shanghai. Alternate over-hesitation and over-confidence in the matter of diagnosis were, however, natural and excusable at a time when nothing had as yet been done to clear up the morbid anatomy of a disease of so fluctuating a type.

In some cases no doubt it was a mere question of language. The late Dr. REID, of Hankow, than whom there have been few more competent or patient observers, while admitting the frequency among his foreign patients of "malarious fever with enteric symptoms," against which quinine was perfectly inoperative, was in the habit of asserting positively that in a practice of 15 or 20 years in Hankow he had never seen a case of enteric fever. Dr. BEGG, though he recognises its presence at that port, believes that it differs from the disease as encountered in Europe, inasmuch as constipation usually replaces diarrhœa, and the eruption is seldom or never seen. These differences, however, as will be shown farther on, are not sufficient to constitute a distinct form of the affection.

However it may be among the natives, about whose diseases and their prevalence and propagation we know hardly anything, enteric fever has not at any time or anywhere in China shown itself in an epidemic form among foreigners. On the other hand, it may be said to be endemic at all the ports open to trade. How or why each individual case arises usually remains a mystery, however diligently we may attempt to construct a history of something swallowed or of something inhaled. It is reasonable to suppose that there is much specific fæcal contami-

* *See* Customs *Medical Reports, passim.*

† *Ibid*, xxviii, 13; xxx, 3.

nation of air blown from fields which are manured exclusively with night-soil, of milk through the medium of adulteration with creek water, and of the aerated beverages manufactured by natives, and sold in large quantities at very cheap rates, chiefly to sailors, in low-class taverns. To refer the cause of the disease to atmospheric or telluric influences independent of a contagium of some kind, is merely to darken counsel by words without knowledge. So long as we are surrounded by natives we are certain to be able to look in the right direction for the cause, whether we succeed or fail in isolating it from its manifold accompanying conditions. Our position is almost identically that of European residents in Indian cities where the close proximity of crowded native quarters is a constant source of danger. Brigade-Surgeon HAMILTON graphically describes* the filthy habits of even the highest caste Hindoos, and the conditions as to milk supply and as to the manufacture of aerated waters, which in India go to account for the spread of enteric fever among the natives, among foreign families, and among the British soldiery.

> The native of India is an extraordinary anomaly; he is so bound down by caste prejudices that he will throw his food away if only the shadow of a stranger, or lower caste native, falls on his cooking place, and a Brahmin would die of thirst sooner than drink out of the vessel of a man inferior to him; yet this severe Brahmin may be seen washing and drinking in a tank, the banks of which are covered with human excrement, washed by every shower into the water he does not hesitate to use for all domestic purposes. . . . . The young soldier drinks foul water or dirtily made drinks such as ginger-beer, lemonade, etc. . . . The milk supply in India is a well known and most fertile cause of disease. . . . It is almost incredible the filthy conditions under which we obtain our milk supply in India. Cows fed on litter and garbage of every description—cow-sheds filthy to a degree—milk vessels washed in liquid sewage—milk diluted with water from the filthiest sources,—these are every day facts.

Making the necessary allowance for different local circumstances, this description might with hardly any exaggeration be applied to the foreign ports in China. I have myself stood by during the washing of a night-bucket and the cleaning of rice under the same tap at the same time, and I saw the spatters from the bucket falling into the rice basket. The rice was of course still uncooked, so probably in this particular instance no harm could be done. But the illustration is sufficient. The danger that must lurk in aerated waters manufactured by persons whose ideas of cleanliness and propriety may be estimated from the example just given is obvious. As regards milk supply, we are, at certain ports where dairies have been established under foreign supervision, better off than British residents are in India. But even under foreign management a great deal of work must be left to Chinese, who will not fail to use dirty water in preference to clean for washing vessels, who will neglect to drain and dry the vessels so washed, and who, when an opportunity offers of stealing milk, will supply the deficiency with water drawn from the nearest source—generally a creek which is no better than an open sewer.

Looking back for a quarter of a century on the medical history of the foreign settlements in China, nothing comes out more clearly than the fact that while at each place a certain show of sanitary improvement has been made, enteric fever has steadily grown in importance as a factor in the sickness and death rates. I give full weight to the fact that in China,

* *British Medical Journal*, 1890, ii, 788.

as in India, greater care and accuracy in diagnosis explain a certain portion, perhaps a large portion, of the increase. But any practitioner who for many past years has kept careful notes of all his fever cases, and now peruses them uninfluenced by the diagnosis recorded at the time, will admit that while some which he once placed under the rubric of remittent fever were in reality enteric, there is a real, notable and progressive increase in the ratio of enteric cases to all fever cases which come under his care. Malarial fevers have correspondingly diminished in frequency and importance, and the question may fairly be asked, though perhaps not yet answered, whether the causes, such as improved subsoil drainage, which are operating towards the extinction of the class of malarial affections, may not be contributing to the increase of enteric disorders.

Etiology.

As regards individual predisposition, not very much can be said. Youth is no doubt a predisposing cause; and it would appear that the number of males attacked is far larger than that of females. Thus, out of a group of 100 successive cases taken at random, 76 were males and 24 were females. But this really gives no information, for a considerable number of the enteric cases treated here come from the shipping in harbour, and these cases are of course all males and mostly young men. Of the same 100 cases the ages were—

Between	0	and	10	years,	in	3	cases.
„	11	„	20	„	„	19	„
„	21	„	30	„	„	57	„
„	31	„	40	„	„	16	„
„	41	„	50	„	„	5	„

The great preponderance of cases in the third decade of life is no doubt exaggerated by the peculiar local circumstances; still the excess is so notable that it cannot be altogether explained away. It may, therefore, be safely asserted that an individual is here more obnoxious to enteric fever between the ages of 20 and 30 than at any other period. Recent arrival in China does not predispose an individual so powerfully as we should expect, judging by the recorded experience of India. Thus there were—

39	cases	in which	the patient	had been	less than 6 months resident,
9	„	„	„	„	between 6 months and 1 year,
13	„	„	„	„	„ 1 year and 2 years,
39	„	„	„	„	more than 2 years;

but the value of the first line of this table has to be seriously discounted for the reason above assigned.

The series of 100 cases upon which I have based these tables was thus distributed through the quarters of the year:—

From January to March	25	cases.
„ April to June	16	„
„ July to September	32	„
„ October to December	27	„

It would thus appear that as regards season enteric fever is most prevalent in summer.

SYMPTOMS.

Before analysing the symptoms which present themselves in well marked cases of various degrees of severity, it will not be inopportune to cite the history of a purely typical case, occurring in a young subject recently arrived, advancing without complication, but with almost every ordinary symptom, to a favourable issue at the end of the third week. It represents the natural course of the disease when the patient is placed amid favourable surroundings, for, after stopping quinine, treatment was limited to a carefully regulated diet, sponging with tepid water and vinegar, the administration of a few chlorate of potassium lozenges, and an occasional enema.

Enteric Fever. Natural course. Recovery.—A young English girl, aged 15½; recently arrived in Shanghai. Ailing for a week with sleeplessness, articular and muscular pain, "stitch" in left side of chest, frontal headache, intolerance of light; anorexia, foul tongue, yellow diarrhœa, sore throat; pungent skin. She had been delirious during the night previous to summoning advice. Had had 10 grains of quinine every day, administered in amateur fashion.

Seen 8th May 1885, supposed to be the 8th day of the disease. The morning temperature was 102°; afternoon, 104°.5; evening, 105°. Face flushed. Spleen tender; could just be felt on deep palpation. No hepatic enlargement or tenderness. Heart healthy. A few disseminated moist râles over posterior surface of both lungs. Tongue brown, moist. No spots. Slight gurgling in cæcal region; no marked tenderness. Pillars and back of pharynx much congested; on each side behind the posterior pillar there is a raised congested patch, only a part of which is visible, which appears to be the main cause of the throat trouble. Stools characteristic.

There was great prostration throughout. A very faint myocardial bruit was audible from the 10th day to the establishment of convalescence. The pulse was soft and lingering, varying in frequency from 78 to 100; dicrotic after the 12th day. Patient was delirious from the 10th to the 20th day; very deaf and stupid from the 10th day onward. The pupils were dilated but sensitive after the 12th day. From the 16th to the 19th day there was general muscular tremor, with subsultus from the 18th to the 21st day. There was no rigor. Sleep was variable, but a fair amount was obtained, mostly disturbed by visions. Cough was troublesome for a few days; on the 10th she expectorated some blood-stained mucus with marked relief, and on the 12th day she had a paroxysm of hurried breathing without dyspnœa, lasting for a couple of hours, during which the respiration rate rose to 40. There was nothing discoverable in the lungs beyond slight bronchial catarrh to account for these symptoms. The condition of the tongue varied; it was sometimes brown and dry, occasionally normal. The lips were cracked, and sordes collected on the teeth on the 11th day. On the 10th day an ulcer appeared on the congested patch on the left side of the pharynx and spread for two days, causing some dysphagia. It had healed by the 17th day, and the patches disappeared shortly afterwards. Thirst was urgent. There was complete anorexia until the 15th day, when appetite began to return. Paroxysms of sweating were frequent. The eruption appeared in two crops, on the 10th and 13th days respectively. From the 11th day out the skin was covered with sudamina. The stools were characteristic up to the 17th day; horribly fetid, but occasionally solid between the 11th and 18th days. No intestinal hæmorrhage. There was slight tympanites, which first declared itself on the 10th day. On the 14th day the abdomen was rather excavated. There was no vomiting; splenic tenderness persisted to the end of the illness, and once or twice slight hepatic sensitiveness was complained of under percussion. There was no ascertainable enlargement of the liver. Gurgling was present from the first in the cæcal region, and from the 10th day onward there was some sensitiveness. Her hair began to fall out on the 11th day, and had become very thin before the illness terminated; six months later it had grown luxuriantly. For a week after convalescence was established

she suffered severely from aching in the soles of her feet and cramping pains in the joints of her fingers and toes. After her recovery her memory was a complete blank with regard to the earlier and middle periods of her illness. The following abstract indicates the range and course of the temperature :—

8th to 15th day.—Max., 105° on 8th morning and 11th forenoon; min., 100°.2 on 15th morning. The temperature was generally close to 104° between 11 A.M. and 3 P.M.

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20th day.—Max., 103°.4 in the afternoon, after a saline laxative, which stirred up and brought away a quantity of putrid fæces. Temperature normal all through forenoon and at night.

After the 22nd day the temperature remained permanently normal.

But it is seldom that a case follows the classical outline of the text-books. A stormy onset may prelude a benign and rapid course to recovery.

Thus, in a case first seen on the 6th morning the patient's skin was dry and a dirty yellow; there was much subsultus on attempting to grasp an object; the tongue was dry; there was no incoherence. The temperature was 104°.6; it rose to 105°.7 at noon, and to 106°.2 at night. Respiration 30 (48 at night), superficial; nothing discoverable in chest. On the 7th day the stools were frequent and characteristic. The temperature remained elevated, and the other symptoms but little changed until the 9th day, when convalescence suddenly set in. On the evening of the 8th day, after the temperature had been high for several days, and had indicated on at least one day what might be called hyperpyrexia, there was very marked accentuation of the second sound in the tricuspid area, the more remarkable as the other cardiac sounds were feeble and distant. This had disappeared when the heart was re-examined two days later. On the 8th and 9th days slight fugitive ecchymoses appeared on the arms. These vanished after a couple of hours, but only to appear again, hardly ever in the same place. The change of position was ascertained by surrounding each patch with ink. Iliac gurgling was distinct on the 7th day. On the afternoon of the 9th day there was a long and profuse sweat, after which every symptom, except intense weakness, at once disappeared.

On the other hand, a condition that hardly passes beyond mere malaise during the whole course of the attack may be accompanied by a lesion destined to prove suddenly fatal within a few hours.

Death occurred suddenly in the case of a young Englishman a couple of hours after I had left him reading a newspaper on the 20th day of what was to all appearance an extremely mild attack of enteric fever. His temperature had always been normal or subnormal in the early morning, rising to 102°.5 or 103° at night. Diarrhœa was never urgent, but the stools were characteristic, and there were rose spots. It was with difficulty that he had been kept in bed, and his life in hospital was a continual protest against the restriction of his diet. At the autopsy a single PEYER's patch, 3 inches from the valve, was found deeply ulcerated, slight congestion being all that could be discovered elsewhere. Death was due to the rapid formation of a clot in the pulmonary artery.

When considering the phenomena presented by a given case it should be borne in mind that no single symptom can be assigned as pathognomonic. No symptom out of all those presently to be enumerated may not be absent. We must be content to judge by the grouping of such as are present in each instance, taking account of their individual unreliability. Thus, for example, the degree of heart weakness manifested need not be proportional to the severity of the disease, nor, as has just been shown, can the benignity of the general symptoms be trusted as an indication of the nature or extent of the existing lesions. It may, therefore, be

stated that in any case taken at random disproportion possibly exists between the lesions and the symptoms. While, therefore, we must, at least for the present, admit that the characteristic grouping of a larger or smaller number of well defined symptoms imparts pathological unity to enteric fever, it is perhaps more true of it than of any other disease that each case has a special natural history, the symptoms often differing widely as between one case and another, and often varying from day to day in seeming arbitrary fashion in each individual case.

There is no means of accurately determining the period of incubation, for the simple reason that it hardly ever occurs that the source of infection can be clearly made out. LIEBERMEISTER, from some extremely vague observations, guesses the average incubation period at three weeks. For us it is only safe to say that we know nothing about it.

It is not necessary to repeat here in narrative form the history of the earliest symptoms which lead a patient to seek advice, and of those observed at the moment when he comes under treatment. So far there is a certain general similarity between all cases, and the history given on page 53 suffices to indicate what these common symptoms are. It will be more profitable to classify the phenomena observed, analysing each group and describing the more important members of it as necessity arises.

Temperature.—It is seldom that a case of enteric fever is seen during the first three or four days. When it is seen at this early period the temperature alone may appear to indicate an ordinary simple fever, or an intermittent of quotidian or tertian form. It may, however, be laid down as a rule that in enteric fever 104° is not reached before the 3rd day. After that day the rise may be very rapid. I have just recorded an instance in which, at 9 P.M. on the 6th day, the mercury reached 106°.2. Such cases are not necessarily the most menacing. However indispensable a careful watching of the temperature is, it cannot be too carefully borne in mind that the bodily heat is only one symptom out of many, and important only in consequence of its effect—whether sudden, as in hyperpyrexia, or prolonged, as in the ordinary course of a continued fever—upon the nervous centres, upon the cardiac muscle, and upon the great glandular organs. That enteric fever may run its course, and even a severe course, with very slight elevation of temperature or with none at all should never be forgotten. Cases of this kind are, however, rare. A more important observation is that in the course of an attack the temperature curve may vary between very wide limits while the general symptoms show no improvement in correspondence with the lower readings of the thermometer. A detailed discussion of modern opinions as to the significance of fever considered in itself would be altogether out of place here. It is sufficient to say that (except in urgent and very rare cases of hyperpyrexia, when the heat alone is sufficient to kill within a short time) the exclusive direction of therapeutical measures to the lowering of the temperature in enteric fever is not reasonable, is, so far as my experience goes, seldom more than momentarily successful, and is often distinctly hurtful.

The general law that enteric fever is of remittent form, the temperature being higher at night than in the morning, is the first outcome of the study of charts constructed from cases

in which antipyretics have not been administered, and wherein the normal curve is not distorted. Exceptionally the form is inverted, the morning reading of the thermometer being higher than that of the night. Neglecting such cases, and supposing that the temperature is taken sufficiently often, it will be observed that—

1°. As a rule, in uncomplicated cases of average severity the daily minimum during the first three weeks varies between 97° and 102°.5, and the daily maximum between 103° and 105°.5.

2°. In exceptional cases there may be no rise of temperature whatsoever, or an altogether insignificant rise, while dicrotism of the pulse and probably the characteristic grouping of many other symptoms indicate the nature of the disease. I have recorded a lingering case with unmistakable symptoms, including eruption, in which the maximum reached was 99°.8, and two others in which there was no rise whatsoever.

3°. When the morning temperature is moderate (*e.g.*, 102° or 103°) there is a steady rise until about noon (occasionally a slight fall), a further rise from about 2 P.M. to 6 or 7 P.M., and a gradual fall of a degree or so up to midnight, the temperature continuing to fall up to 6 A.M.

4°. When the morning temperature is very high (*e.g.*, 105°) there is a fall of one degree or a little more towards noon, a rise through the afternoon up to 6 or 7 P.M. until the morning temperature is reached or slightly exceeded, and then a fall until about midnight, when the temperature is nearly the same as it was at noon.

5°. The morning temperature may be in turn subnormal, normal, or not more than 1° above normal all through the course of a severe case in which temperatures of 104° or 105° are registered at other periods of the day.

6°. Occasionally in the course of the disease a sudden fall from 104° or more to normal or less (in one case, fatal four days later, to 96°), the depression lasting for an hour or more, may occur without anything being found to account for it, and without any effect upon the other symptoms.

7°. When convalescence is commencing the temperature is often very unsteady; subnormal, normal, or slightly over normal in the early morning, slightly rising or falling towards noon, and falling or rising towards evening.

8°. Occasionally, but rarely, a permanent fall from a high daily average temperature to normal occurs suddenly, and marks the final departure of the fever. This is generally accompanied by a profuse sweat or a rush of diarrhœa, and may be regarded as termination by crisis.

9°. When a spurious relapse occurs in the course of convalescence, or when a true relapse occurs after several weeks, the temperature follows the same rules as it observes in ordinary cases.

10°. The internal temperature is generally, but not always continuously, high for several hours before death. A high internal temperature with cold extremities is of extremely bad augury, but the prognosis is not necessarily fatal.

11°. Death may occur in cases where the temperature has been moderate throughout. (*See* PROGNOSIS.)

The weekly averages of temperature, taken every three hours day and night, in a series of 62 cases terminating in recovery, in which no antipyretics were administered, are exhibited in the subjoined table. The observation has a certain interest, and is not without value inasmuch as it indicates that longer intervals of comparatively low temperature occur during the second and third weeks than would be inferred from the two or three observations which commonly are all that are daily taken. It has to be remarked that the averages given for the

sixth week are derived from 15 cases only, as out of the 62 these (24.19 per cent.) were all in which the fever lasted beyond the 35th day.

Day.	Average Maximum.	Average Minimum.
1st to 7th	104°.13	101°.21
8th „ 14th	103°.65	98°.47
15th „ 21st	103°.12	98°.51
22nd „ 28th	102°.44	97°.62
29th „ 35th	101°.92	97°.95
36th „ 42nd	103°.70	98°.84

In order to enumerate all the peculiarities of the temperature curve it would be necessary to detail a multitude of isolated cases. Thus, I have notes of several lingering cases in which the temperature after hardly exceeding 100° for several days at a time, swung between 102° and 105° for a week or more, and then fell to normal without any general improvement. Or I might cite at length the report of a case fatal on the 23rd day, in which up to the 17th day the highest temperature was 101°.2. On the 17th evening it suddenly ran up to 103°, but fell immediately to about 100°, at which it remained until a few hours before death. Any set of rules contained within a moderate compass must therefore be imperfect. Those just given do not profess to do more than cover the majority of cases.

The Nervous and Muscular Systems.—The symptoms referrible to these systems I have grouped into series without attempting to indicate the exact periods at which the different groups make their appearance. The order corresponds in a general way to the progress of the disease, but in some cases the groups overlap one another.

Rigor; prostration; general malaise; marked languor; irritability of temper; muscular weakness with exaggerated sense of fatigue on the slightest exertion; restlessness; sleeplessness, or disturbance of sleep by visions; vertigo; tinnitus; subjective sensation of flashes of light before the eyes; headache—frontal, temporal or occipital; backache; pains in muscles and joints; subjective feelings of chills and heat; slight incoherence.

Apathy; stupidity; loss or disturbance of memory; delirium; deafness; muscular tremors, subsultus, rigors; dilated and insensitive pupils.

Exaggeration (occasionally) of senses of hearing and smell; stupor; violent or muttering delirium; moaning, sighing; fly-catching and vermin-hunting; hallucinations of sight and hearing; increased cutaneous and muscular reflex irritability; convulsions, tetanic contractions; hiccough; stupor, insensibility; involuntary evacuations; coma-vigil. Suicidal attempts may be made, but not with suicidal intent. The patient lies with eyes half open and lower jaw fallen.

Rigor may be an initial symptom, or may present itself first after several days, or even in the third or fourth week. In the latter case it is probably due either to an intercurrent malarial attack or to septic absorption. It may occur frequently, or not at all. It may be of excessive violence, and it may be accompanied or not by a fugitive fall of temperature. Sleeplessness is very frequently distressing, and sometimes proves almost invincible. Spontaneous pain in the muscles and joints is often accompanied by localised areas of exquisite tenderness—on the scalp, on one or the other side of the abdomen, most frequently in the epigastric region. Or spontaneous pain may take the form of sciatica or pleurodynia, or of

flying internal pains of neuralgic character or following the course of the spine. Or it may be sternal, and give rise to the suspicion of periostitis. Finally, such pain may persist all through the disease, or be altogether absent. Vertigo is often a very early symptom. Delirium is nearly but not always present. In one case (fatal) it was extremely violent on the 5th day, and was accompanied by vermin-hunting. It is seldom present before the 7th day, but then may take any imaginable form. It may be present only at night, or it may never pass beyond a condition of dreaminess and slight incoherence. When delirium is violent there are generally terrific illusions. Early muttering is of worse augury than early violence. It is usually, and I imagine correctly, thought that assurances on the part of the patient that he is perfectly well are of ominous significance, but I have found this apparent buoyancy in many severe cases which however terminated favourably. Depression is the rule, and is certainly more favourable than exaggerated cheerfulness in bad cases. Delirium may persist to the seventh week, and I have notes of one curious instance where it was first observed on the 43rd day. Muscular weakness shows itself in obvious ways from the first. Later, it is manifested by dorsal decubitus and a tendency to sink to the foot of the bed. A case proved fatal in which this tendency was observed as early as the 4th day. The tongue becomes flabby and tremulous, and falls back under accidental pressure with the thermometer; the patient has difficulty in protruding it, and when protruded he does not think of drawing it back. These are late and ominous symptoms. The mouth hangs open. There may be paralysis of the soft palate, with consequent inability to swallow, and snoring. The tremor, which is generally marked at an advanced period, is usually due to mere weakness, but is occasionally of a convulsive character. I have seen it disappear temporarily after a severe hæmorrhage. I have also seen it extremely severe as early as the 4th day in a case which recovered. It may be paroxysmal, almost of the character of rigor. Subsultus is almost invariable when a case is grave or prolonged. Floccitatio and carphology are evidences of profound poisoning, and are seldom if ever absent in fatal cases. Large disorderly jerking about of the hands is of like or of still worse import. Of two cases of general convulsions (not epileptic), one recovered and one died. Tetanic contractions of the neck, back and limbs, or of the forearms alone, or of the neck muscles only, are fortunately rare. In cases where they occurred I never saw recovery. They are evidence of exaggeration of the reflex activity of the cord excited by toxic or hyperthermic disturbance of the spinal centres.

I observed one curious case in which, while the forearms were so firmly flexed on the arms that no justifiable amount of force could extend them, the patient now and then extended them voluntarily.

To the same class of phenomena belong the instances in which the slightest touch on the cutaneous surface makes the patient jump as if an electric shock had been administered, and those wherein light percussion of the pectorals induces strong contraction and causes localised lumps to form. The fugitive retraction of the abdominal wall which is sometimes observable should probably be placed under this category. In five out of eight cases in which during the second and third weeks I have had an opportunity of testing the patellar tendon reflex, I believed that it was slightly exaggerated on both sides. It must, however, be acknowledged that "knee-jerk" activity differs so much in perfectly healthy individuals, that no great value attaches to this observation.

Deafness is sometimes of gradual onset and sometimes sudden. There is always intolerance of light, and the pupils are almost invariably contracted and usually insensitive. In one case I observed an interval (22nd to 26th day) during which they became sensitive. Smell and hearing sometimes become abnormally acute. I have notes of three such cases, two of which (where hearing was exaggerated) proved fatal, while the third, in which the sense of smell became extraordinarily developed, recovered. In none of these cases was there any illusion of the senses involved.

In the two fatal cases the patients, for several hours on the day preceding death, instead of answering questions put to them, repeated the questions with absolute accuracy.*

Paroxysmal dyspnœa and fits of sighing or irregular respiration, for which no adequate explanation can be found in the lungs, are purely nervous phenomena. As mere curiosities:—in one case the attack was ushered in by a series of fainting fits, and in another a fit of unconsciousness occurred on the 16th day, lasting for about half an hour. Both terminated favourably.

Loss of weight is always marked. The daily average for 10 cases was 1.49 ℔. It begins early, and is due as well to wasting of the muscles as to absorption of fat.

During convalescence paræsthesiæ of various kinds are common.

Excluding one case of aphasia, which was probably bulbar, I have not seen the true paralyses (spinal, cerebral or peripheral) described by TROUSSEAU, LANDOUZY, NOTHNAGEL, EISENLOHR, MURCHISON, CORMACK and many others. It seems probable that exceptional violence of the initial lumbar and articular pain, the hebetude of the period of illness, and the profound weakness of early convalescence, may in some instances assume the guise of paralysis.

Symptoms exhibited by the Digestive System.—Here also I have grouped the symptoms of typical cases in progressive order. It is not to be supposed that all are present in any individual case.

Anorexia; thirst; nausea; bilious vomiting; white or brown loaded tongue with red prominent fungiform papillæ at the tip and along the margins; diarrhœa or constipation; fœtor of breath; fœtor of stools.

Colicky pain; gurgling in the cæcal region with hypersensitiveness on palpation; tympanites from relaxation of the muscular layers of the intestine; enlargement and tenderness of the spleen, which reach their maximum before the 10th day; slight enlargement and tenderness of the liver.

The tongue is dry, brown, sometimes black, fissured longitudinally or transversely, or may be perfectly normal, or it may change rapidly from the former to the latter condition, while the other symptoms remain unaltered. The lips are dry and blood-stained from picking; the gums and teeth covered with sordes. Diarrhœa may be frequent and profuse, 10 or 15 stools in the 24 hours; as a rule, the number of stools is from four to six. The stools are generally liquid, flocculent, depositing on standing a sediment of epithelial débris and undigested food, speckled with minute black dots, alkaline (rarely acid or neutral), ochre-coloured or brown, perhaps blood stained, always horribly fetid. They are sometimes viscid, and often like gruel. Constipation frequently replaces diarrhœa, and at a late period may indicate the existence of deep ulcers paralysing the intestinal walls, and may precede profuse hæmorrhage.

Exaggerated tenderness instead of being limited to the cæcal region may be referred to the whole abdomen, or may exist only in the left iliac region, or over a small area in the middle

* Écholalie of French authors.

of the hepatic region, or close to the umbilicus, or in the epigastrium. It is often absent. Gurgling usually but not always accompanies tenderness. It may appear for the first time late in the third week. Colic may be severe. In one case it was so violent as to induce a condition of collapse, and to suggest the existence of strangulation of the intestine. Vomiting may be a source of serious distress. When it occurs early it is always bilious; when urgent at a late period it usually takes the form of hæmatemesis, the vomit containing nearly pure blood or "coffee-grounds," or late vomiting may be due to sudden and excessive secretion of bile. In no case have I found very notable enlargement of either liver or spleen. The lower edge of either seldom reaches to more than 1 inch or 1½ inch below the corresponding costal border, and tenderness on palpation is by no means invariable. Tympanites is generally present; it may be limited to one side of the abdomen; it may suddenly disappear and then recur; it may be absent throughout; or it may be so excessive as to cause great distress, and, later, to prove an independent source of danger by pressure on the diaphragm.

The diarrhœa may at the beginning be of dysenteric form. It may be speedily arrested, giving place to constipation, or it may persist and become colliquative. The stools are sometimes olive-black and oily or dark brown, from excess of bile; or they may consist of bloody serum ("meat-washings") with slight fawn-coloured sediment; or at the last they may contain portions of slough and have a gangrenous odour. Occasionally the stools are almost normal throughout. As a rule, the appetite fails early, but it may be normal, or (rarely) voracious. Thirst is often urgent; in graver cases it is altogether absent.

Slight and temporary intestinal bleeding at an early period need give rise to no anxiety. The case is, however, far different when at a late stage with profoundly altered blood, and probably degenerated vessels, a severe hæmorrhage occurs. It is not easy to say which is of worse omen—a discharge of arterial blood which has been rapidly expelled after escape from an eroded mesenteric vessel, or a copious oozing of tarry blood from the edges of extensive areas of ulceration. Hæmorrhage may appear early and persist, or it may be intermittent. I have seen it profuse on the 5th and 6th days, on the 6th day, on the 9th and 10th days, and on the 13th day, all four cases terminating favourably.

In one case, which terminated in recovery, hæmorrhage was constant from the 8th to the 14th day. It was then absent for a week, appeared slightly on the 21st day, and was profuse on the 25th, 27th, 28th, 30th, 32nd, 37th, 55th and 56th days, the temperature during this long period being generally normal, occasionally subnormal, and only on one occasion (34th day) reaching 101°.4.

It may first appear in the sixth week (fatal case). At whatever period it occurs, provided it be not of great violence, it may or may not influence the temperature.

Thus, in a case which was throughout characterised by hæmorrhages of all degrees of severity, small quantities of blood were seen in the stools on the 12th, 17th, 18th, 19th and 20th days. On the 21st day three hæmorrhages occurred, amounting to 80 ounces of scarlet blood, which speedily coagulated. The patient was blanched by the bleeding, but showed no signs of collapse. The temperature, which had been 104° on the night of the 20th day, was on the 21st, 99°.5 (7 A.M., four hours after the first hæmorrhage), 99°.6 (noon), 99°.8 (5 P.M.), 100°.2 (10 P.M.). It rose again on the 22nd day. Three hæmorrhages, amounting to 17 ounces, occurred on this day, mostly black clots, but had no effect on the temperature. Again, on the 24th and 37th days there were small bleedings. Recovery.

Urine.—The urine is at first "febrile"—dark, scanty, muddy, of high specific gravity, and containing a large excess of urea and uric acid, while the chlorides are notably diminished. By the end of the second week it is generally pale and copious, and later on often contains a small quantity of albumen, or, more frequently, of peptones. In very severe cases with prolonged high temperature hæmaturia may occur, and along with early deep jaundice the urine (I think invariably) contains the colouring matter of the blood. I have notes of one case of severe hæmaturia beginning on the 10th day which ended in recovery.

Retention is rare, but I have once or twice observed it at the end of the third week, while the rectum was evacuated unconsciously. Incontinence of urine, as well as of fæces, is common enough, and may occur early. In four cases, all females, "incontinence," "stammering bladder," "intense bladder irritability," "distressing dysuria," were, respectively, noted from the first. Irritability of the bladder is sometimes paroxysmal, disappearing for days at a time. As a rule, involuntary escape of both urine and fæces does not occur until between the 11th and 20th days. In one case (female) it was observed on the 6th day.

The Circulatory System.—The heart speedily shows signs of weakness and irritability, its muscular structure being no doubt affected by the high bodily temperature, while it is being directly poisoned by the chemical products fabricated by the disease germs. Syncope may readily be induced by allowing the patient to sit up. Sooner or later, in the great majority of cases, but generally towards the close of the second week, a soft bruit is audible with the systole at both apex and base, but most distinctly at the apex. It indicates no valvular mischief, and is doubtless due to toxic interference with the innervation of the heart and degenerative changes in the cardiac muscle, manifesting themselves by irregular contraction. It has, however, given occasion to an erroneous diagnosis of pericarditis. It generally persists until convalescence is established. A mitral regurgitant murmur may declare itself at an advanced period; but this too may safely be attributed to changes in the muscular wall of the heart, and will disappear with the advance of convalescence. (*See* also CONVALESCENCE.)

To weakness of the heart's action is to be attributed the cold extremities and the paroxysmal cooling of the surface observed in grave cases at an advanced period. The patient while his internal temperature is 104° or more may complain bitterly of cold. The same mechanism explains the dyspnœa, sometimes amounting to orthopnœa, and accompanied by lividity of the features and imminently threatening collapse, which, without any sufficient explanation furnished by the condition of the lungs, and in the absence of any cardiac valvular lesion, occasionally occurs paroxysmally in the third or fourth week. I noted it once on the 8th day.

Epistaxis, which almost invariably occurs, and at any period, is an indication of weakened (degenerated ?) vascular walls. It may by its violence prove menacing even in the first week.

The pulse is usually frequent from a very early period, but in any case soon becomes small, soft and lingering. Its frequency is subject to wide variations without any modification of other symptoms. I have noted a rate of 40 to 46 between the 8th and 21st days, 48 to 60 between the 13th and 18th days, and 65 to 72 between the 10th and 14th days. It seldom fails to reach 110 or 120 at some period of even the most favourable cases. It is, I think, always dicrotic,

after the beginning of the second week, and when this cannot be at once recognised raising the arm will often make it perceptible. Dicrotism will sometimes be detected by the sphygmograph before the finger can make it out.* When very distinctly pronounced the heart sounds at the same time assume a fœtal character. Allied to the dicrotic condition is that in which there is a back stroke after each beat, like the pulsus bisferiens of aortic stenosis. The pulse may be irregular and intermittent. In estimating the importance of this symptom we should not forget that the patient may be in the habit of smoking to excess. Apart from this, when the general symptoms are not disquieting intermittence is not necessarily of bad augury. It may be due to some reflex inhibitory action starting from the intestine. Instability of the pulse, depending on relaxation of the arterial walls as well as on the enfeebled cardiac action before referred to, is manifested by the quickening effect of a change of position and by the condition approaching collapse often induced in the later stages of the disease if the patient should suddenly sit up in bed. So likewise is to be explained the tendency to local congestions, superficial and visceral, in which doubtless the altered character of the blood plays a part. Hence the hæmorrhages not dependent on ulcerative erosion of vessels, the hypostatic pulmonary congestion, lividity of the features, and the occurrence of small cutaneous ecchymoses.

The pulse may be at the same time both quick and lingering, the expansion of the vessel being slow even when the complete cycle is a short one. In rare cases it may be full and vibrating, or large, soft and regular; and this even at an advanced period. But as the end of the third week is reached it is, in grave cases, miserable, and for hours or days before death may be reduced to a mere ripple.

The Respiratory System.—The nervous symptoms which declare themselves through the lungs have already been mentioned. Bronchitis with dry, hacking cough and scanty, frothy or muco-purulent expectoration is of almost invariable occurrence. The sputa are often blood-stained, the blood being derived either from the inflamed bronchial mucous membrane or from the pharynx. Breathing is accelerated almost from the first, and I have seen the respiration rate reach 42 in a minute on the 7th day, without any trace of pneumonia to account for it.

Pneumonia is considered under COMPLICATIONS.

Phenomena exhibited by the Skin.—The skin may be dry and pungent from the first, or parchment-like, or bathed in sweat. Towards the end of the second week paroxysmal drenching sweating fits are often observed. They are frequently absent. When they occur the secretion has usually a nauseous odour, sometimes very marked. They may have no influence on the bodily temperature; they are sometimes immediately preceded by a rigor, and as they are as common in winter as in summer they cannot here be attributed, as they sometimes have been in India, to excessive atmospheric heat over-stimulating the sweat glands. They are probably of septic origin. Rarely a profuse critical sweat, somewhere about the 20th day, marks the disappearance of the fever. A fugitive pink or livid flush will early be noticed on either cheek or on both, independent of the occurrence of pneumonia.

* I have many sphygmograms taken from enteric fever cases, but I do not reproduce them as they are almost identical with those figured by MAREY: *Physiologie médicale de la Circulation du Sang*, pp. 389, 391.

In two cases where there was no pneumonia I observed herpes at the corners of the mouth. In another, complicated with severe pneumonia and pleurodynia, I found an eruption of herpes zoster. Once also (on the 42nd day) a herpetic eruption appeared on the prepuce. This may have been independent of the fever, but the patient assured me that he had never before suffered from this affection.

The entire surface of the body may be dusky. About the 10th day the typical eruption should be looked for. It is frequently absent in cases where all other specific symptoms are perfectly well marked, and its appearance may be delayed at least as far as the 15th day. When present it appears at intervals of four or five days, in successive crops of minute lenticular, slightly elevated, moderately hard papules, of rosy colour (occasionally livid) which disappears under strong pressure; or an additional spot or two may be found every day for a week or 10 days. I have never seen it elsewhere than on the abdomen and on the thorax as high as the level of the nipples. There is no noticeable increase of fever corresponding to the appearance of each crop. The eruption invariably vanishes very shortly after death. Sudamina are generally abundant.

Dr. BEGG has rarely, if ever, observed the specific eruption in enteric cases at Hankow, and Dr. WALES has never seen it at Canton.

In rare instances I have observed minute ecchymosis-like spots grouped into small patches on the arms or the chin. They are fugitive, disappearing after a couple of hours without leaving a trace, but reappearing after a longer or shorter interval, hardly ever in the same place. In one instance the successive appearances of these spots on the face were attended by marked symptoms of collapse.

Jaundice, which, according to Sir WILLIAM JENNER and Sir THOMAS WATSON, never accompanies either typhus or typhoid fever in England, is here generally (perhaps always) present to a greater or less extent in prolonged cases. A faint yellow tinge of the skin is a common early symptom, and even in the lightest cases, when accompanied by deepening of the colour of the urine, is doubtless evidence of pyrexial exaggeration of the normal blood-corpuscular disintegration. In proportion to its depth it indicates more or less profound alteration of the blood and more or less serious interference with the action of the liver. When severe jaundice occurs early (before the 11th day) it becomes a most formidable complication; it is generally associated with hæmoglobinuria, intestinal hæmorrhage and hæmatemesis—indications of blood dissolution. Such cases are for the most part fatal (*see* PROGNOSIS). When it appears late it is no longer of such grave import, and its indications are sufficiently supplied by other symptoms. I have published many cases in which it was extremely well marked in or about the third week, but which ended in recovery.

Bed-sores, more or less extensive gangrene from pressure, rarely occur before the middle of the third week. (*See* COMPLICATIONS.)

Prickly heat, in all the cases where, under my observation, it had been present at the onset of enteric fever, rapidly disappeared; and mosquitoes avoid an enteric fever patient.

There is generally considerable, but temporary, loss of hair during the fever or during convalescence.

Latent Enteric Fever.

It is but seldom that we come across the "ambulatory typhoid" in which a patient goes through the entire, or nearly the entire, course of his fever without suspecting that there is anything wrong with him. The following histories describe conditions approaching this:—

Mercantile assistant, aged 29. Accidentally observed in his office, where he had been working in the usual way for the usual number of hours daily. He looked extremely ill, but said that beyond sleeplessness there was nothing the matter with him. Sent to bed. Temperature at noon 104°. Stools liquid, frequent, black from iron which he had been taking freely on his own account. Three rose-coloured spots on abdomen; much tenderness, distinct gurgling, tympanites. At night, temperature 102°.4; wandering. Tongue dry, yellow, red tip and edges. Spots continued to come out, and the fever followed the course usual in the third and fourth weeks. Convalescence was established on the 12th day after treatment began. When, after five days, the stools lost their black colouration they were seen to be typical.

In this case sudden death might have occurred. The circulation was feeble and intermittent when the patient was first seen, and on the following day he had a paroxysm of cardiac failure with dyspnœa, extremely rapid incomplete cardiac contraction, pallor and cold sweat, which would probably have terminated fatally had it come on while he was sitting at his desk.

In the case just related the syncope was probably due either to some inhibitory action reflected to the heart from an ulcerated intestine, or simply to muscular failure of the heart itself, the degenerated fibres being greatly overstrained by the patient's daily work, which had not been in any way diminished.

In the following case it would not have been surprising if sudden death had occurred by perforation. The intestinal lesions were certainly extensive and probably deep.

A lady recently arrived in Shanghai; phthisical family history on both sides. Shortly after her arrival she went on a long sea trip, in the course of which she caught cold. This was speedily followed by "break-bone pains," occasional vomiting, yellow diarrhœa, sore throat, distension and tenderness of the abdomen. Her skin was always hot, often pungent; she slept badly, and talked in her sleep. Complete anorexia. After 10 or 12 days frequent starting of the muscles of the limbs was observed. Meanwhile she went about at each port that she visited, inspected curio shops, and took much exercise. She swallowed a great deal of quinine.

On her return to Shanghai, probably about the 18th day of her illness, her tongue was dry and irritable, all the papillæ largely developed. Her gums were spongy. There were a number of minute herpetic ulcers on the mucous membrane of the lips. Her skin was dirty-yellow; lips pale. The abdomen was slightly distended, uniformly sensitive. Severe cough, with frothy tenacious expectoration. The temperature was 101° (7 A.M.), and rose to 104°.3 at night. For 12 days a fever temperature was maintained, after which convalescence was established. The morning temperatures ranged between 100° and 103°.5 for 11 days, and the night temperatures between 101°.4 and 105°.2. The stools were characteristic, and all the symptoms indicative of the third and fourth weeks of ordinary enteric fever.

It is noteworthy that in this case relapse occurred six weeks after full convalescence.

Enteric Fever in Infancy.

I have but rarely encountered enteric fever in young children; I hear of many cases, but I see hardly any. Malarious fevers, fever from indigestion, from worms, from exposure to heat, occasionally fever of purely nervous character, are all common enough among children, and no-

doubt explain many marvellous recoveries from typhoid within a week or 10 days. When it does occur in children under 10 or 12 years old the fever runs higher during the first week than it ordinarily does in adults, and there is little or no tendency to intestinal hæmorrhage. Apart from this, the symptoms are essentially the same as those which present themselves later in life. After running its normal course of three or four weeks genuine typhoid in the child often leaves after it a condition of deep anæmia with dyspepsia, bowel irregularity, fetid stools, and a tendency to moderately high temperature towards evening, which last almost indefinitely. Here quinine, or quinine with arsenic, alcohol and gentle saline purgatives, with frequent sponging with hot diluted vinegar, are more effectual than even change of air, which often completely fails to restore health. Iron is, I think, seldom of any use and is often injurious.

I have had no fatal case among children, which may perhaps be explained by the small experience of the disease in infancy to which I have confessed.

COMPLICATIONS.

The complications of enteric fever are without number. Any disease may be accidentally associated with it, and no constitutional condition affords protection against it. Certain authorities assert that there is a close relation between *Scarlatina* and enteric fever. I can cite but one case in which the one disease ran into the other:—

An Englishman, aged 22, passed through an attack of scarlatina of moderate severity in January 1888, and was still in hospital completely isolated and his skin still desquamating when, on the 3rd February, enteric fever set in with very severe initial symptoms. It ran a rapid and tempestuous course, wild delirium alternating with stupor between the 8th and 10th days. Characteristic diarrhœa was present, with rose spots, and gurgling and sensitiveness in the cæcal region. The temperature fell to normal on the 18th day, and did not again rise.

The complication with *Pneumonia* is so frequent that a definite relation between the two morbid conditions can hardly be doubted. Whether in a given case it forms a part of the morbid condition to which the name enteric fever is given, or appears as something superadded, it is occasionally the direct cause of death. But however severe both diseases may be, if they occur in a healthy subject, and both run a typical course, the prognosis is by no means bad.

Enteric Fever. Pneumonia. Severe nervous symptoms. Recovery.—Englishman, clerk, aged 32. Ailing for about 10 days. Sleepless, severe vertical headache, muscular pains, prostration; anorexia, brown baked tongue with red tip and edges, frequent bilious vomiting, yellow diarrhœa. For the last four days the stools have contained blood. Coughing.

Seen 2nd January 1876, assumed to be the 10th day of the illness. At the base of the right lung is an area about the size of the palm of the hand absolutely dull. It is with difficulty that the patient can be got to draw a long breath; when he does crepitation is audible. In the centre of the patch crepitation is coarse, finer towards the margins. At the edge of the dull area respiration is tubular. Marked immobility of right side. Patient cannot lie on the left. Sputa rusty.

Half a dozen rose spots round umbilicus. Gurgling and tenderness in right iliac fossa. Tongue as above described. Pupils medium, sluggish. Much muscular tremor. Respirations 40; pulse 100; temperature (4 P.M.) 103°.

The pneumonia was severe. Respiration varied between 40 and 50; pulse between 100 and 130 (on the 16th, 17th and 19th mornings falling to 84, 96 and 96 respectively, the corresponding breathing rates being 46, 40 and 48); temperature between 100° and 103°.8 in the morning, and between

101° and 105° at night. On the 16th and 22nd mornings the temperature fell for a couple of hours to normal, without any corresponding general improvement. Paroxysms of sweating were severe and frequent. On the 12th day about 2 ounces of pure blood was expectorated, and it is noted on the same day that the stools were like "meat-washings." Delirium, muttering, subsultus and indifference from the 13th day; fly-catching on the 21st day, when also he had a prolonged rigor. Pulse hyperdicrotic. On the 15th day it is noted: "Base of right lung completely solid; unconscious of dyspnœa; pupils widely dilated and insensitive; muttering delirium during semi-sleep; very distinct myocardial bruit."

Meanwhile the enteric fever pursued its course. The stools were frequent and characteristic; there was distinct gurgling on palpation in the cæcal region; whether there was tenderness could not be ascertained. On the 17th day the following note was taken: "Is constantly drowsy, but can hardly be said to sleep. Constant starting of legs. A touch on either sole causes a jump as though a shock from a battery had been given." A fresh crop of rose spots came out on the 18th day, the former having faded. There was great abdominal distension. The heart's action became extremely feeble towards the end of the third week. On the 23rd day crepitation was again audible, and on this day there was a considerable loss of blood from the nose. After this all the symptoms abated. Delirium persisted to the 30th day, but by the 32nd day convalescence was established.

The right lung is that most commonly and most severely affected; but inflammation may start in both at once, or in the second as the first is clearing. It may be accompanied or preceded by severe *Pleurodynia*, or *Intercostal Neuralgia* with an eruption of *Herpes Zoster* over the corresponding nerve area. It may arise late. In one case I noted its commencement on the 21st day.

Bronchitis can hardly be considered a complication as its occurrence is almost invariable. I find but one case in which its complete absence is noted. It is generally present from the first, or declares itself after a few days. The characteristic expectoration is often tinged with blood.

Pleurisy is rare in cases which recover. In cases fatal by pneumonia the pleural cavities usually contain much blood-stained serum.

Pharyngitis is a very common complication; indeed, I think always present to a greater or less degree, and therefore presumably to be ranged among the essential symptoms. LUSCHKA'S gland in the pharynx, though rudimentary under ordinary circumstances, appears to assume a temporary developmental action during the course of enteric fever. In the earlier stage the mucous membrane covering it, and especially that covering its lateral portions, becomes congested, just as the mucous membrane overlying PEYER'S patches does. Later on, when the glands in the intestine are ulcerating, LUSCHKA'S gland frequently ulcerates likewise, causing severe spontaneous pain, dysphagia, cough and blood-stained expectoration, partially occluding the posterior nares, whereby the mouth, always open for respiration, is kept dry, and perhaps contributing to the bronchitis and lung congestion common at this stage. The nauseous smell often observed on a patient's breath is largely due to the condition of the throat.

The pharyngeal condition sometimes involves great danger, and indicates profound poisoning.

In one case, which terminated in recovery, ulceration of the back of the pharynx made its appearance on the 10th day, and slowly spread to the pillars, soft palate, and mucous membrane covering the hard palate, sloughs being thrown off, and deep gangrene seeming imminent for several days. On

the 22nd day an abscess was found in the scrotum at the root of the penis. This was incised and dressed antiseptically, but a deep slough formed, and the urethra was seriously threatened.

Laryngeal ulceration is, I think, rare. The voice is weak but seldom hoarse, and in my postmortem records I find lesions of the larynx noted only twice. I must confess, however, that they were not always looked for.

It would naturally be supposed that enteric fever attacking a person already advanced in *Phthisis* would run a severe and probably fatal course. This, however, has not been my experience. In fact, all the cases which have come under my care with this combination have by a singular chance terminated favourably.

Intestinal Hæmorrhage is considered in the section devoted to symptoms.

Even in cases where the most sedulous care is taken with regard to cleanliness and the avoidance of pressure, *Bed-sores* will occasionally occur some time about the end of the third week. As a rule they do not greatly add to the patient's distress, as the same altered condition of the blood, which is an important factor in their production, has by this time induced indifference by its intoxicating effect on the brain. But they add considerably to his danger. They appear as livid patches on the parts most exposed to pressure—elbows, upper fold of the nates, and sometimes on the heels. Unless they yield to treatment sloughs quickly form, and when detached lay bare the fascia or muscles, sometimes over a surface of 2 or 3 inches in diameter.

Parotid Bubo is usually of fatal significance. MURCHISON reports losing five cases out of six in which parotid bubo appeared, and quotes TROUSSEAU to the effect that a case scarcely ever recovers when pus forms in the depths of the parotid gland. Recovery is certainly very uncommon. I can cite but one case, and in this both glands suppurated. The symptoms were throughout of extreme severity.

Deafness was an early symptom (5th day). There was much drowsiness, the patient dozing for hours at a time with her eyes half open. Delirium and subsultus on the 6th day. When fully awake she complained bitterly of paroxysms of intense pain starting from the shoulders and radiating to the finger-tips, being particularly severe in the elbows. The elbows were red, very sensitive to pressure, but there was no effusion into them and motion was free. . . . . At the end of the first week the lips were cracked, teeth covered with sordes; face flushed purple; very stupid. . . . . After the 10th day the temperature fell, but the nervous symptoms were unabated. She was always restless, and the delirium was occasionally wild. Her sense of smell became extraordinarily acute. . . . . On the 14th day she was vermin-hunting, and a crop of purpuric spots came out on the buttocks. Her pulse was now running. Cramps of leg muscles. Constant shouting; all sorts of fancies as to where she was. On the 15th day she complained of severe pain behind the jaw on the left side, and a deep-seated hard swelling, very sensitive to pressure, was detected there. Her temperature rose next morning to 103°.5. Left side of neck now brawny. A similar swelling forming on the right side.

Both glands were incised, each incision giving exit to a large quantity of pus, that from the right side "laudable," but that from the left, broken down and mingled with blood clots and small sloughs. Convalescence set in shortly after the collections were evacuated.

Jaundice (*see* section on SYMPTOMS) is probably present to a greater or less extent in all cases of average severity. Occasionally, however, it is so marked as to assume independent importance. I note only those instances in which it could be qualified as "deep," where the

skin assumed an olive tint and the conjunctivæ were intensely yellow; where also the onset of the symptom was not gradual. Of these I can cite nine, occurring respectively on the 5th, 8th, 10th (three cases), 11th, 14th, 17th and 44th day. Of these, those in which the jaundice declared itself on the 5th and 8th days, and two of those in which it was first observed on the 10th day, proved fatal, severe intestinal hæmorrhage occurring in three of the fatal cases.

Thus, out of nine cases in which "deep" jaundice occurred as a complication, four died, a mortality of 44.44 per cent.

It would also appear, though the cases are too few to support a categorical statement, that the earlier this complication arises the more fatal is its import,—

For out of five cases in which it occurred before the 11th day four died, a mortality of 80 per cent.

A case of *Acute Mania* occurring on the 10th day proved rapidly fatal.

A case of *Pyæmia*, in which on the 15th day the left shoulder and left knee were found red, hot, swollen, fluctuating, spontaneously painful and extremely sensitive to palpation, proved fatal on the 20th day.

The same patient suddenly became *Aphasic*, without paralysis of the limbs or face, on the 16th day, and continued in this condition for an hour. He recovered speech, but remained stupid up to his death.

I have seen two cases of *Ulceration of the Cornea*, one of which proved fatal.

In the case which recovered a small ulcer was observed on the 26th day at the outer edge of the left cornea, followed by three more a few days later. All four healed slowly, but the eye had not completely recovered until three weeks after the appearance of the first ulcer.

In several cases of enteric fever occurring among females, which I have elsewhere published, it was incidentally noted that the *Catamenia* were not arrested or materially affected by even the severest forms of the disease. In one case where the attack came on during the period of *Lactation*, and nursing was continued (against advice) through the entire course of the disease, the child appeared sufficiently nourished, and certainly received no injury. The milk supply was diminished but not arrested, and on the cessation of fever it again became normal in amount. In this case convalescence was established on the 18th day, and the highest temperature registered was 104° on the 5th, 7th, 12th and 14th days.

I have also published a case of early *Pregnancy* in which the temperature did not fall to normal until the 27th day, the highest temperature registered having, however, been only 103°.5. Pregnancy proceeded uninterrupted; indeed was not suspected until after the attack had passed by.

Diarrhœa, yellow and flocculent, occurred on the 7th day, and persisted. Muscular pains of extraordinary severity formed the most distressing symptom in this patient's case. There was but slight tympanites; no spots; but there were distinct tenderness and gurgling in the cæcal region. The catamenia had been absent for two months, but as they had frequently been irregular on previous occasions no particular attention was paid and the fact was not mentioned. However, 230 days from the beginning of the fever a mature child was born. Pregnancy therefore dated from 50 days before the patient fell ill.

It so happens that this is the only instance in which I have met enteric fever in a pregnant woman, and I therefore draw no conclusion as to the general probability of pregnancy being undisturbed by the fever.

In persons who before contracting enteric fever have been impregnated with *Malaria* we are extremely likely to find the latent condition roused into activity by the newly imported disturbance. Thus, no doubt, are to be explained the symptoms of intermittent fever which often usher in enteric, but which are soon masked by those of the acute disease, and many of the intercurrent attacks of fever of intermittent or remittent form which frequently delay convalescence. If this hypothesis be correct, it must be admitted that the two forms of disease may strike at the same time, for the complication described not uncommonly presents itself in individuals who have but recently arrived in China, who have never lived in a malarious district, and have never suffered from any malarial affection.

Latent *Syphilis* is occasionally brought to light. Thus, I have published a case in which the patient having no motive whatsoever for deception assured me that for more than 15 years he had been completely free from any manifestations of a syphilis contracted 19 years before, and which had run through an ordinary course with marked secondary symptoms. He had been vigorously treated during three or four years with mercury and iodide of potassium, and had presented no tertiary symptoms.

On the 44th day of enteric fever of rather more than average severity an unmistakeable coppery eruption appeared on the chest and forearms. Next day there was œdema and lividity of the soft palate, swiftly followed by specific ulceration of the left anterior pillar. Within three weeks, during which the patient was treated with mercurial inunction, and iodide of sodium internally (iodide of potassium inducing diarrhœa), the eruption disappeared and the throat recovered.

The combination of *Dysentery* with enteric fever is particularly fatal, not only on account of the double strain brought to bear on the victim's vital powers, but on account also of the grave hepatic complications which (I think) always present themselves when the two diseases occur simultaneously or run into one another. I do not, of course, here refer to the slight dysenteric symptoms which occasionally accompany the initial diarrhœa of enteric fever. It is not uncommon to discover ulceration of the colon in cases of apparently frank enteric fever, and ulceration of the lower end of the ileum in cases of seemingly uncomplicated dysentery. But there are groups not yet sufficiently studied in which enteric fever is grafted on to dysentery, and conversely. Either may precede the other. In two fatal cases in which enteric fever preceded I was unable to obtain a postmortem, but the symptoms pointed clearly to the presence of pyæmic abscesses, probably in large number, in the liver. In a third case, in which enteric fever followed immediately on dysentery,—

The autopsy revealed innumerable small abscesses in the liver, varying from the size of a pea to that of a Brazil-nut, so that any piece of the gland when thoroughly washed presented the appearance of a coarse-meshed sponge. The colon was ulcerated throughout its entire extent, and contained a considerable quantity of altered blood. An ulcer in the cæcum had perforated. The lower end of the ileum was sown with circular ulcers in the midst of infiltrated areas, some of which had not broken down, corresponding to PEYER's patches.

In such cases hæmatemesis is very liable to occur, and I am disposed to attribute it to rupture of varices of the lower œsophageal venous plexuses, which offer a ready receptacle for the blood of the portal system hindered in its passage through an encumbered liver. During inspiration there is a derivation of venous blood to the thorax, but under normal conditions this is relieved by the bronchial, azygos and phrenic veins, which are in communication with

the coronary vein of the stomach. When, however, the strain on the œsophageal veins is, as in cirrhosis of the liver and presumably in widespread suppuration, vastly increased, this relief may easily prove insufficient, the œsophageal varices may give way, and hæmorrhage into the stomach be produced.

Convalescence and Sequelæ.

Convalescence is always gradual. The patient begins to sleep better and to feel refreshed by sleep; mental depression and indifference disappear. After an attack of ordinary severity weakness is profound and the body is left wasted to an extreme degree. Muscular strength, appetite and the power of digesting return slowly, while the process of recovery is apt to be interrupted by fugitive bursts of fever, the temperature sometimes suddenly rising to 103° or 104° for a few hours. These paroxysms are often coincident with the action of a laxative, which stirs up before expelling fæcal accumulations containing undigested food which has fermented or putrefied. Many weeks elapse before recovery can be said to be complete; but after enteric fever, as after many other acute diseases, health appears to be established on a higher level than it had reached for months or years before the attack.

The course of convalescence is, however, often interrupted and lengthened. Crops of boils are a source of annoyance, but are not of serious import. Inter- and intra-muscular abscesses are not uncommon, forming rapidly and silently in the majority of cases, and reaching an enormous size before the skin betrays any sign of their presence. When within the substance of muscles they contain broken-down blood clot and fragments of tissue as well as pus, and are no doubt due to the degeneration of Zenker. The affected muscles remain weak for a considerable time after the healing of such abscesses; but in all the cases which have fallen under my observation there has been complete recovery of function. Occasionally severe intra-muscular inflammation occurs, but does not proceed to suppuration. The deep inguinal glands sometimes enlarge enormously, and by pressure cause œdema of the lower extremity. Independently of this cause, œdema of the hands, feet and ankles usually supervenes as soon as the patient begins to move about and use his hands. This symptom finds a ready explanation in the persisting cardiac weakness and the relaxed (degenerated?) vascular walls, as well as in the anæmic condition, which otherwise betrays itself by pale lips and gums, breathlessness, and a soft or musical murmur at the base of the heart, obviously of hæmic origin. The myocardial systolic bruit usually present after the first week of fever, and which, although audible at base and apex, is more distinct at the apex, passes as convalescence advances into the musical systolic bruit just mentioned, which is most audible at the base. Both disappear as strength returns.

Periostitis of the long bones, of the ribs and sternum has been noted in several of the cases upon which this study of enteric fever is founded. The nodes may often be dissipated by treatment, but when they suppurate there is generally superficial exfoliation of the underlying bone and tediously protracted ulceration of the skin.

The following case was not under my care during the original illness.

8th November 1888. Clerk, aged 36.—Patient was in hospital from the 25th March to the 28th April 1888 with severe enteric fever. Before leaving he had pain in the lower left chest wall

anteriorly, followed by a swelling which burst about the beginning of June, and has ever since gone on draining two or three fluidrachms of serous and flaky pus daily. He has frequent attacks of fever of short duration, and the discharge increases before these attacks come on. His complexion is waxy and features puffy. Neither liver nor spleen is sensibly enlarged. Appetite good, bowels regular. Has not suffered seriously from his lesion until a few weeks ago, since which time it appears to him to cause slight attacks of spasmodic dyspnœa. Tongue brown, loaded. Temperature normal. Urine neutral; S.G. 1,015; straw coloured, with slight mucous cloud. Filtered, it gave no deposit on boiling or when treated with nitric acid in the cold. Boiled with nitric acid it turned a delicate and permanent pink.

Half an inch to the left of the middle line of the sternum and 3¼ inches above the tip of the ensiform cartilage there is a fungating ulcer. The probe entering by the side of the excrescence passes backwards and outwards at an angle of 30° with the surface for 2¼ inches, when it enters a smooth cavity. No dead bone felt. The exploration was very painful.

There was no sign of deposit in the lungs, and this, along with the history and the patient's general appearance, negatived the suggestion of a tubercular abscess.

A semi-circular flap, 3 inches in radius, with its convexity downwards and its base extending horizontally from the inner edge of the left mammary gland to the middle of the sternum, was with the areolar tissue and muscle raised from the thoracic wall. The internal intercostals between the fifth and sixth costal cartilages were divided, when an abscess cavity was opened, of which the posterior wall was formed by new tissue matted over the pleura and pericardium. The fifth rib was carious for about an inch from its articulation; it was resected. The upper half of the anterior inch of the sixth rib was also carious, and was chipped and scraped away. The sixth cartilage was found to be calcified, and was excised. An abscess cavity was now found in the lower third of the gladiolus, containing much débris and pus. This was cleared out with a sharp spoon, and a counter-opening made into it from the front of the bone. The cavities were thoroughly rubbed with iodoform, drained, and the flap replaced. Recovery was uneventful, but healing was not complete before the expiration of 10 weeks.

Among sequelæ referrible to the nervous system, I noted in one case, unique in my experience, the supervention of myopia (= 4 D), the refraction having previously been normal. Cutaneous anæsthesia and paræsthesiæ of various kinds, affecting limited areas, such as the inner surface of one thigh, the soles of the feet, etc., frequently occur and persist for weeks. On the other hand, there may be sciatic pain of various degrees, sometimes sufficiently severe to cause lameness; muscular cramps, referred chiefly to the calves; or neuralgia, generally of the limbs.

Often after a severe and protracted illness a fatuous condition persists for several weeks, the patient remaining excitable, and incoherent when excited, emotional, easily moved to laughter and tears. Or he may become melancholic. Memory is weakened or almost abolished. There may be actual imbecility. Hallucinations, seldom I think of a terrifying kind, maintain restlessness. They present themselves either by day and night or only at night, and are sometimes recognised by the patient himself as illusions.

I once saw in consultation at another port a case of *Hepatic Abscess* which had declared itself during convalescence from a severe attack of enteric fever. The opinion was expressed that it was sequential to the intestinal lesions of the immediately precedent illness. But inasmuch as, so far as could be judged, it was a single abscess, and as the patient had for many years been deeply impregnated with malaria, it appeared more probable that its origin had been

malarial. Diagnosis of its cause was further obscured by a history of prolonged dysentery 18 months before.

Operation was recommended, but for some reason was not performed. A month later I was informed that the abscess had burst into the bowel, and the patient shortly succumbed to septic absorption and purulent diarrhœa.

This is the only case within my experience in which hepatic abscess could with any show of reason be attributed to enteric fever as its cause.

Relapse and Recrudescence.

The term relapse is commonly used to designate not only true recurrence with reproduction of all the characteristic symptoms of the disease, after a more or less prolonged period of convalescence from an attack which has run the usual course to fall of temperature and cessation of the primary symptoms, but also, in a loose sense, any reappearance, which is more than merely fugitive, of fever. Clearly the former is the correct acceptation of the term, but the time which has elapsed between the close of the first period of high temperatures and the opening of the second, is an element the importance of which is differently estimated by different observers. Thus, supposing a full fortnight of apparently final convalescence had passed, many would consider a fresh lighting up of fever accompanied by most or all of the symptoms observed in the initial attack as a relapse, whereas it might, and probably would, in fact, be due to the regular but slow development of lingering and unsuspected lesions in the intestinal canal. Such a case would more properly be described as a "recrudescence," though it should answer to the ordinary test of a "relapse," namely, the recurrence of typical stools and perhaps of a typical eruption.

Accepting this latter test, with its acknowledged imperfections, it may, I think, be said that true relapse of enteric fever is rare in China. Convalescence, however prolonged, is usually definitive. The following case appears to be a genuine instance:—

Enteric Fever. Relapse after six weeks. Recovery.—Forty-two days after the last record of a fever temperature in a case which had lasted four weeks, the patient began to experience loss of appetite, rapidly increasing weakness, sleeplessness and diarrhœa. I saw her on the 6th day. Her morning temperature was 102°.5; evening temperature 104°. Stools nearly watery; yellow, fetid. Tongue normal. Abdomen distended. Slight tenderness to percussion in hepatic region. Distinct gurgling. The temperature ran as follows (falling at night for three days):—

6th to 10th day	Morning range	102°.3 to 103°.7	Evening range	103°.4 to 104°.4
11th „ 13th „	„ „	100°.8 „ 102°.8	„ „	103°.8 „ 104°.1
14th day	Morning temperature	103°.5	Evening temperature	102°.8
15th „	„ „	102°.4	„ „	98°.2
16th „	„ „	101°.5	„ „	100°.9
17th to 22nd day	Morning range	98°.4 to 99°.8	Evening range	98°.4 to 101°.1

The patient was deaf and occasionally delirious. Dilated pupils throughout. Two rose spots were discovered on the 10th day. All through there was excessive perspiration. The tongue varied from normal to extreme dryness. The catamenia lasted from the 3rd day of the fever to the 13th. Diarrhœa was characteristic. There was intense prostration; congested pharynx; cough; headache; horrible visions. Convalescence was established at the end of the third week.

On the other hand, the following case presents merely the characters of repeated recrudescence:—

Patient admitted on what was supposed to be the 10th day of an illness characterised by general malaise, severe spontaneous epigastric pain, sleeplessness, persistent fever, constipation alternating with yellow diarrhœa, loss of appetite, wasting.

He was brought to hospital in collapse, referred by him, after reaction, to the violence of an attack of abdominal pain. There was no hernia; abdomen tympanitic, extremely sensitive all over.

Characteristic diarrhœa speedily set in, alternating with stools perfectly black, often solid, but generally liquid; dicrotic pulse; sleeplessness; temperature rising during the day from about 100° in the early morning to close on 104° at night. Spots were observed on the 12th day. *(Primary period of fever.)*

From the 25th to the 33rd day the morning and evening temperatures were below 100°, all the symptoms abated, and convalescence appeared to have set in. On the 32nd day a slice of chicken was allowed. *(First interval.)*

On the 34th day the afternoon temperature rose to 102°, and the entire train of symptoms speedily reappeared. Spots were observed on the 40th day. The temperature was frequently over 104°, but fell gradually from the 43rd day, reaching normal on the 55th day. Abatement of the other symptoms was not, however, so complete as before. *(First recrudescence.)*

From the 56th day to the 60th there was gradual improvement, with normal temperatures. The patient was kept on restricted diet. *(Second interval.)*

On the 60th day the afternoon temperature rose to 102°.5, and the characteristic symptoms, with the exception of the eruption, which was not observed, reappeared. This condition lasted to the 84th day, when a normal temperature, morning and evening, was again registered. The highest temperature reached during this period was 103°. *(Second recrudescence.)*

From this out there was no rise of temperature. But convalescence could not be said to have been established before the 93rd day. From the 80th day to about the 130th there was marked imbecility. For three weeks after convalescence began severe sciatic pain on both sides caused lameness, and a periosteal node formed on the chondral extremity of the fourth rib on the left side.

I have never met with a fatal case of relapse. That a second attack may however be attended by reproduction of all the original lesions, is attested by the following postmortem record,* which I reproduce in default of similar material of my own:—

Female, aged 21. Relapse two months after convalescence. Severe acute general peritonitis most marked about the viscera occupying the right iliac fossa. Both large and small intestines contained pale yellow, pea-soupy liquid, but no solid fæces. Evidences of the original attack consisted of ragged ulcers with slaty base and undermined edges, partially cicatrised, situated in the cæcum and adjacent 2 inches of ileum, and of an isolated typical "typhoid" ulcer 2 feet above the ileo-cæcal valve. The changes indicative of the recent attack consisted of vivid congestion surrounding for a variable distance the Peyerian patches here and there for a distance of 4½ feet up the ileum. The surface of the patches was greyish, on the same level as the surrounding mucous membrane, and covered by yellow adherent pseudo-membrane, the separation of which entailed no loss of substance. In one or two instances the pseudo-membranous film transgressed the limits of the patch and overlay the surrounding halo of congestion, notably so in the neighbourhood of the ileo-cæcal valve. The solitary follicles of the large intestine down to within an inch of the anus were prominent and surrounded by congestion, but nowhere ulcerated. The mucous membrane of both small and large intestines intervening between these lesions was softened and acutely inflamed. There was marked fibroid thickening of the wall of the cæcum—at first sight

* Transactions of the Pathological Society of London, xxxvi [1885], p. 196.

suggestive of "growth,"—with matting together of the surrounding tissues. The mesenteric and retroperitoneal glands presented the same morbid condition. They were greatly enlarged; most of them hard and caseous, but some softened and acutely inflamed. The condition was confined to the abdominal lymphatic glands.

It may be questioned whether this was not a case of recrudescence rather than of true relapse.

Recurrence of enteric fever is certainly rare, so rare that it is currently believed that one attack protects the individual for many years, if not for his whole life. Two cases have, however, been recently recorded by practitioners in China, in one of which the disease recurred after 10 years, and in the other after four years.*

Mode of Death.

Death may occur at almost any period. Early, from the initial impact of the disease, the vital functions being overpowered by the poison before there has been time for the development of the ordinary symptoms. Late, from exhaustion, through continued molecular degeneration of vital organs. The earliest date at which I have seen death occur was the 8th day, and in that case I was unfortunately unable to obtain a postmortem.

In the majority of fatal cases one or other of the following conditions is the immediate cause of death. The patient may die in the collapse of sudden general peritonitis, preceded or not by perforation of the bowel or by the bursting of a suppurating mesenteric gland; or in the collapse of hæmorrhage; or from heart failure; or from the cumulative poisonous and hyperthermic action exerted on all the tissues, and notably on the blood, on the brain, and on the nervous centres regulating the circulation, respiration and temperature as well as secretion and excretion; or from pulmonary congestion and œdema; or from pneumonia, whether specific or merely intercurrent, and whether accompanied or not by pleurisy with serous (generally hæmorrhagic) effusion; or exhausted by colliquative diarrhœa, with or without repeated moderate hæmorrhages; or from septicæmia due to products of bowel destruction finding their way into the veins.

It is not uncommon to find a patient momentarily displaying an extraordinary amoun of muscular strength a very short time before death.

Diagnosis.

The solution of the problem of diagnosis must depend on a careful study of the symptoms in each individual case. In no instance will all the usual symptoms be found congregated. The early supervention of nervous exhaustion is a valuable indication; so also are dilatation and immobility of the pupils, with pearly sclerotics. Dicrotism of the pulse is exceedingly important, but doubt has generally disappeared before this is observed. The course of the temperature is an indispensable guide, but more information cannot, I think, be expected from it than I have indicated on page 56. Certain cases of acute miliary tuberculosis and of tubercular meningitis will occasionally deceive the very elect, but luckily these are of such

* Customs *Medical Reports*, xxxiii, 19; xxxvii, 22.

infrequent occurrence here that they need hardly enter into consideration. The distinction between enteric fever and severe remittent is of all the most obscure. Neither the history; nor the range of the temperature; nor the condition of the tongue; nor the nervous symptoms, including sleeplessness, delirium and stupor, if the case has been neglected; nor the frequent constipation; nor the splenic enlargement, will serve as a guide. Yet here accurate diagnosis is by no means merely a matter of scientific nicety. The heroic treatment for which remittent fever frequently calls is likely enough to be fatally mischievous in enteric. For my own part, I have seen at least one case of the latter disease in regard to which no doubt remains in my mind that the patient was poisoned with quinine. Thus, the compound term "typho-malarial fever" which has arisen out of the mysterious connexion between remittent and typhoid has done incalculable mischief. Not only does it crystallize a pathological doctrine which is no better than a surmise, and which in all probability is utterly wrong, but it suggests a line of treatment which is generally distinctly hurtful. At the commencement of a fever, intense depression out of proportion to the period of the illness, pale and puffy features, pearly sclerotics, sleeplessness, headache and vertigo, which very frequently usher in the more characteristic symptoms of enteric, should rouse strong suspicion when the indications of the thermometer are doubtful. At a slightly more advanced stage the maximum temperatures will be found higher in malarial than in enteric cases, and the daily temperature curve composed of long waves instead of short ripples; the liver is more frequently enlarged and painful; bilious vomiting is more frequent; the stools frequently contain an excess of bile, and tympanites is uncommon. Doubt is not long justifiable; the uselessness of quinine is manifest within two or three days, and if by chance the patient should be constipated, his extraordinary susceptibility to the action of a laxative is at once suggestive of commencing enteric fever. Indeed, the diagnosis is commonly fixed before the temperature curve has run long enough to exhibit the difference between the frequent short rises and falls which occur each day in enteric fever and the regular daily ascent and descent in remittent.

It is essential to note that the symptoms marking the onset of enteric fever may be subjectively indistinguishable from those that make up the chronic "seediness" which is occasionally the reward of habitual drinking. Loss of appetite, sleeplessness, horrible visions, foul tongue, thirst and deranged bowels, with perhaps mucous or bilious vomiting, are regarded as natural incidents of periodical recurrence; they give rise to no suspicion of any special significance, and often the second week of enteric fever is reached before advice is sought.

Prognosis.

There is probably no disease in which recovery so frequently takes place from a condition so desperate as is often encountered in enteric fever. On the other hand, there is no disease in which the mildness of symptoms may prove more deceptive. Prognosis is therefore always doubtful. This much is certain, that it can never be based on excessively exaggerated temperature in the early period of the disease, nor upon moderate temperature in the later periods. I have the histories of three fatal cases in which the temperature, taken every three hours, never exceeded 102°.5. There is hardly a symptom at any stage, not even excessive

hæmorrhage, that is by itself of absolutely fatal import. Deep jaundice occurring in the first 10 days is of exceedingly bad augury. Out of five such cases, four died, a mortality of 80 per cent. A high internal temperature with cold surface is usually, but not always, of fatal significance. Of four cases in which large disorderly movements of the hands were observed, three died, or 75 per cent. Finally, four cases of tetanic contraction of the neck, back and extremities (one case), or of the arms alone (three cases), all died. Apart from these symptoms, which are fortunately of infrequent occurrence, it is only after considering the daily range of the temperature and the number of hours during which it remains at a high level, carefully reviewing the condition of all the organs, estimating the power of resistance remaining to the nervous system, the integrity of the muscular structure of the heart, the functional activity of the liver, spleen and kidneys, and the extent and depth of the destructive process in the bowel, that a probable opinion as to the future can be expressed. And even when this is altogether favourable, it must not be forgotten that a pin-hole ulcer may be on the point of perforating the intestine and changing the entire aspect of affairs within an hour. It is evident that pre-existent disease of the heart, or of any viscus, is of evil omen for the prognosis. There are certain indications of imminent death, such as expressionless features, eyes widely open gazing into vacancy, lower jaw fallen, complete wakefulness with absolute indifference or insensibility to every impulse that may possibly arise from within or from without, body cold and bathed in sweat, hardly perceptible pulse and respiration. But these are obvious signs of the final agony, and need no skilled interpretation.

PATHOLOGY.

In dealing with enteric fever we are no doubt brought face to face with fermentative and putrefactive processes, but whether these are of one kind only, or are set going in many and various directions at once, and whether differences of type in the enteric affections which we have hitherto classed together under "enteric fever" correspond to differences in the fermentative germs, or merely to differences in the environment into which such germs are introduced, are questions which for the moment are insoluble. It is now widely believed that enteric fever is caused by a specific micro-organism. But EBERTH'S bacillus has never been identified in India, and never, so far as I know, in China. I myself have diligently searched for it, but without result. In India, again, there is a growing belief that one of the fevers prevalent in that country, though symptomatically indistinguishable from enteric fever, is characterised by intestinal lesions differing from those of that disease, and, therefore, presumably due to a different agency. Wide experience in China leads to a like conclusion (*see* MORBID ANATOMY). But even further, certain Indian observers hold that cases of fever may show bowel lesions identical in general aspect with those of true enteric fever and yet not be due to the specific cause which produces the latter.* It seems, however, in the present state of knowledge, to be a wanton introduction of confusion to promulgate the doctrine that, although among the forms of continued fever occurring in Europe and America specific enteric fever is the only one characterised by the presence of intestinal lesions of a peculiar type, it is an open question whether this should hold good for cases occurring elsewhere. However

* *Twenty-fifth Annual Report of the Sanitary Commissioner with the Government of India*, p. 27.

this may be, those who are familiar with the clinical and anatomical features of genuine enteric fever in European countries will not fail to recognise that disease in the account here given of the symptoms and morbid anatomy of the affection which passes as enteric fever in China.

If non-specific irritation be invoked as the cause of certain cases of fever indistinguishable from enteric, then it must be confessed that in a considerable number of instances enteric fever as verified by autopsy does seem to take its rise from a chill or from the eating of subsequently suspected meat. I have published such cases in the Chinese Customs *Medical Reports*. Here we must first make allowance for mere coincidence. But as a far larger number of cases appear to be related to such accidents than the doctrine of chances will explain, and as we cannot admit that different causes can give rise to specifically identical effects, we are forced to assume that at least in some instances incriminated meat has come from animals infected with enteric fever,* or that, under some elementary influence common to all the apparent causes, pre-existent indifferent micro-organisms are transformed into the organism which causes enteric fever. This latter explanation is purely hypothetical, and so far altogether unsatisfactory.

The "typhoid state" is occasionally developed so early that there must be another cause for it besides prolonged high temperature, or absorption of transformed products of increased bodily waste, or septic invasion of the blood by fluids furnished by the intestinal ulcers, or a combination of all these factors. Intercurrent falls of temperature, even when prolonged, are often without any effect on the general condition; and the other causes assigned demand a longer time for the manifestation of their action than the histories of such cases as I now refer to permit us to assume. This residual cause can be no other than a chemical poison or more than one, secreted or elaborated by the germ or germs. What, therefore, appears really essential is the recognition of the intoxicating product, whatever it may be, before it has induced destructive organic lesions. This recognition must necessarily precede any but empirical attempts to arrest the destructive action before it has advanced beyond the stage of irritation or congestion; for it is certain that in any given case the germs must be in full activity before their presence is manifested. The mere identification, no matter how certain, of a specific germ would, therefore, not advance matters much on the side of profitable treatment, however interesting it would be from a scientific standpoint, and however important from the point of view of preventive medicine.

Morbid Anatomy.

I have no intention of describing the morbid anatomy of enteric fever as though I were writing a text-book. What follows is designed mainly to show that the lesions discovered postmortem are essentially the same as those encountered in cases of enteric fever examined in Europe and America. The importance of this lies in the fact, already often mentioned, that in China many cases of what is certainly enteric fever are diagnosed as "remittent" or "typho-malarial," and are consequently treated in a manner which does not conduce to recovery.

* On the occurrence of enteric fever among animals, *see* Griesinger, *Traité des Maladies infectieuses*, p. 238 (French translation, 1877). Also *Transactions of the Pathological Society of London*, xxxvi [1885], p. 527.

The first striking general notion obtained from studying the morbid anatomy of enteric fever is, that there is no assignable ratio between the severity of the symptoms observed during life and the extent or depth of the lesions to be expected after death.

Reference has been made to the extraordinary and puzzling variety in the grouping of symptoms encountered in enteric fever, a variety so great as to suggest that more than one disease may be included under the term. Yet when the postmortem records of fatal cases are confronted with the clinical reports we find as an almost invariable rule that to the multiplicity in symptoms there corresponds an essential unity in the organic lesions. On the other hand, it occasionally happens that a case proceeds in close conformity with the acknowledged type, but the lesions discovered after death, though sufficient to explain the symptoms, are not those which we associate with enteric fever. This is illustrated by the following extracts from the postmortem records of two cases recently observed, in which the course of symptoms was strictly in accordance with the average course of "enteric fever." The fever no doubt was enteric, but not in the special sense which we attach to that qualification.

CASE I.—Death occurred on the 24th day. * * * On opening the abdomen the transverse colon was enormously distended with gas, its inferior border reaching to within 4 inches of the pubes. There was no general peritonitis. The liver was slightly enlarged and dripped with blood on section; it weighed 65 ounces. The gall bladder was tightly distended with olive-green fluid. The spleen was enlarged and very friable, presenting two large yellow, broken-down pulpy infarcts at the upper end of its posterior border. Kidneys overfilled with blood; otherwise normal. The bladder contained a few ounces of very slightly albuminous urine.

The ileum was injected on its peritoneal surface. The last 6 inches of its mucous membrane was soft and œdematous, ecchymosed in large patches. There was no ulceration or infiltration of PEYER'S groups, but the upper surface of the ileo-cæcal valve and the mucous membrane adjoining it were gangrenous and black. There was no perforation. There were no adhesions round the cæcum. The mucous membrane of the cæcum was deeply injected, and the cæcal surface of the valve was, like the ileac surface, gangrenous. The serous surface of the ascending colon was injected. The bowel contained a considerable quantity of apparently normal fæces. The mucous membrane as far as 2 or 3 inches beyond the hepatic flexure showed extensive patches of ecchymosis.

CASE II.—Death occurred on the 22nd day. * * * The peritoneal cavity was distended with gas free from fæcal odour. On incision there was a profuse escape of turbid, yellow fluid. The diaphragm was arched into the chest; its peritoneal surface deeply injected, and patches of lymph here and there over it. Surface of stomach, of small intestines and of colon injected,—purple. The stomach was enormously distended with gas and fluid. The colon was also much distended. The great omentum was rolled up and tucked under the lower border of the transverse colon. The small intestines were distended, and glued together by flakes of recent and bands of organised lymph. Flakes of thick pus were scattered widely over their surface. The parietal peritoneum was injected, but there was no lymph deposit on its surface. The liver extended from the fourth interspace to the costal border in the nipple line. Its tissue was soft, but not abnormal to the naked eye. It weighed 74 ounces without having been drained but after the escape of a considerable amount of blood during its removal. The gall bladder was empty. The spleen was swollen and soft, covered with lymph in flakes, bathed in pus derived from a partially localised collection behind and internal to it. It weighed 12 ounces. The posterior peritoneal surface of the stomach was deeply injected, covered with flakes of lymph. It aided in enclosing a magma of broken down pus and lymph, serum and effused blood, which was retained by rather loose adhesions between the stomach, spleen and pancreas. The left extremity of the greater curvature was fringed with organised lymph in pieces from $\frac{3}{4}$ inch to 1 inch long. There were large

ecchymoses on both mucous surfaces. The stomach contained a blood-stained turbid fluid. There was no perforation and no ulcer. There was no noteworthy enlargement or hardening of the mesenteric glands. The lower 18 inches of the ileum presented a vast number of solitary ulcers with central slough not yet separated. These were strictly limited by the ileo-cæcal valve, in the neighbourhood of which they were most thickly set. There was no perforation (water test under high pressure). There was no ulceration or even infiltration of PEYER'S patches. The small intestine contained, besides an enormous quantity of gas, a little bloody tenacious fluid. The serous surface of the cæcum was much injected. The appendix vermiformis was normal. There was no evidence of any localised inflammation in the peri-cæcal region. The posterior cæcal glands were not in any way enlarged or distended. The large intestine was injected on its serous surface. Its mucous membrane was smeared with blood-stained fluid, here having a green tinge; when washed it appeared normal. The kidneys were very slightly congested.

I have detailed the preceding exceptional cases for the sake of completeness, and more especially with the view of contributing to the body of facts destined eventually to justify or upset whatever theories may from time to time be put forward with regard to the nature of enteric fever in the East.

Turning now to ordinary cases, I have no records of postmortems made during the first week of the disease. The skin is usually parchment-like, showing ecchymoses in the supra-clavicular regions, on the abdominal wall, thighs and ankles as well as on the dependent parts of the body. For about 24 hours after death the surface retains a certain amount of heat.

For instance, 21 hours after death, the average temperature of the air having been 40° F., the temperature of the skin of the abdomen (surface thermometer 10 minutes in position) was 50°.

The duration of rigor mortis is variable.

I have noted it "strong" 7½ hours after death; "very strong" 17½ and 21 hours after death; and "passing off" after 9 hours.

There is often a discharge of bloody and frothy fluid from the nose and mouth. The muscles are usually dry on section. The blood is fluid throughout the body, with little or no tendency to coagulate. The diaphragm is generally strongly arched into the chest, and in cases of general peritonitis the pleural surface of the diaphragm is commonly inflamed in patches corresponding in position with the inflamed areas on the peritoneal surface. The pleuræ usually contain bloody or citrine-coloured serum in small (sometimes in very large) quantity. In such cases there are always patches of pleuritic inflammation, with or without lymph deposit. The lungs may be perfectly healthy, or in any stage of pneumonia, or passively congested and œdematous. Septic infarcts are sometimes found in one or other of the (lower) lobes. The bronchial mucous membrane is injected and often smeared with muco-purulent secretion. The bronchial glands are almost invariably enlarged and hard. The pericardium is generally normal as to its surfaces. In cases fatal by pneumonia it contains straw-coloured or pink serum (4 fluidounces in one case).

The heart may be to all appearance perfectly normal even as late as the middle of the third week. But generally its muscular tissue is soft, dead-leaf colour, and often dotted with minute yellow spots. The cavities may contain no blood, or either side may be full or distended. Coagula are often found, postmortem or of older date; if formed during life they are (I think) most likely to be found in the right ventricle and left auricle.

In certain of the muscular fibres fatty or vitreous granular bodies replace the striations, producing what has been described as segmentary dissociation. There is a great increase in the number of the muscular nuclei, and pigment granules are distributed among the fibres. The interstitial tissue contains multitudes of small round cells and free leucocytes as well as much granular exudation. Fibres in a perfectly normal condition are found side by side with others in which degeneration is far advanced.

The endothelial surface of the great vessels is often stained with the colouring matter of the blood.

On opening the peritoneal cavity there will generally be found more or less peritonitis, and often general inflammation. The cavity is sometimes distended with gas, even when there is no perforation. There may be no effusion, or much, sometimes blood-stained, or yellow and turbid. If there has been perforation or an approach to perforation the intestines will be found matted together by lymph and false membranes round the seat of the accident. The serous surface of the bowel may be inflamed universally or in patches. The intestines are usually distended with gas and bulge into the incision. On filling them with water under pressure a minute perforation is sometimes brought to light which would otherwise escape notice.

I was once present at the autopsy of a case of enteric fever where the peritoneal cavity was distended with gas and contained much fæcal liquid as well as pus and lymph. Water pressure detected a pin-hole aperture, which under mere inspection would probably not have been seen. It was in the middle of an inflamed PEYER'S patch, 12 inches from the valve, and, with the exception of one other patch which was merely congested, the rest of the intestine was apparently healthy.*

But in almost every case, at whatever period after the first week it may have proved fatal, all the stages of morbid alteration in the intestine are present. On opening the digestive tract from the termination of the œsophagus to the anus, thickening and injection in small circular patches of the mucous membrane of the stomach will probably be noticed. These patches are mostly found on the posterior surface, and they may be the seat of very acute inflammation or of ecchymosis. The stomach is often largely inflated, and its serous surface injected, even when there is no general peritonitis. The small intestine will be found to contain yellow fluid fæces, or perhaps blood and putrid liquid. The mucous membrane of the duodenum may be intact or irritated, and it is not uncommon to find one dead lumbricoid worm or more in this section of the bowel. A few solitary glands in the jejunum may be inflamed. But the characteristic lesions are to be found in the ileum, nearly the whole surface of which may (rarely) be studded with solitary ulcers. As we ascend the bowel from the ileo-cæcal valve, where the lesions are usually the most advanced, following the surface opposite the mesenteric attachment, we come upon elliptical areas of infiltration of PEYER'S patches, and anywhere on the bowel surface infiltrated solitary follicles, both manifest to sight and touch as elevations more or less hard, but covered with mucous membrane little if at all altered. For the most part below these, or sometimes

* Long ago RILLIET and BARTHEZ, and HENOCH, when treating of typhoid fever in young children, described cases wherein, although all the most characteristic symptoms of enteric fever were present, the postmortem signs were limited, so far as the abdominal viscera were concerned, to enlargement, softening or disintegration of one single PEYER'S patch, or to a superficial and apparently trivial inflammation of the mucous membrane of the large and small intestines (*entérite typhoïde;* R. and B.). "We must, therefore, conclude that pathological alterations may be very slightly developed, or even altogether absent, without this fact authorising us to deny that a given case was one of typhoid" (HENOCH).

surrounding them, are patches in various stages of inflammation, hæmorrhagic infiltration, sloughing and ulceration; the sloughs bile-stained, small or extensive, superficial or extending deeply into the muscular coats, or to or through the serous coat. The ulcers are ragged-edged or sharp-cut with undermined borders and worm-eaten, pulpy, grey or blood-stained surfaces. The patches not yet ulcerated, or only superficially ulcerated, are pale or injected. A section made through such a patch at right angles to its surface reveals an underlying firm yellowish-white layer, of variable depth. The ulceration becomes more and more general as we approach the valve. It may be strictly limited by the valve, which may be almost eaten through, although the cæcal surface and the mucous membrane of the entire colon may be intact. Occasionally PEYER'S patches to a great extent escape, and the surface of the bowel is thickly set with sloughing solitary glands. Here and there we may find ulcers in which a process of repair had begun by the downward inflexion of the edges and the formation of granulation tissue, the first steps towards cicatrization. We may also find, chiefly at the highest limit of the lesions, small patches still infiltrated, but which are undergoing a process of retrogression. Thus almost every autopsy presents a more or less complete history of the nature and course of the morbid process in the intestine.

The infiltration of PEYER'S patches and of the solitary glands consists, when slightly advanced, in a rich cellular proliferation and development, wherein the adjacent mucous membrane usually shares, so that the elements of the mucous membrane are fused with those of the glands. A vertical section through a patch brings to light a somewhat dense layer of variable thickness, made up of masses of embryonic cells embedded in an amorphous substance. Of these cell masses some will be found undergoing fatty or granular, not caseous, degeneration, and here and there minute sloughs will be seen where the infiltration has obliterated the capillaries.

Commencing at a distance of about 5 mm. from the edge of an ulcer the peritoneal coat is thickened and cloudy. The longitudinal muscular fibres are dissociated, and infiltrated with round cells, which are also thickly scattered between the transversely cut fibres of the circular coat. Minute hæmorrhages are here and there visible among the bundles; the capillaries are greatly enlarged, and the vascular walls are abnormally friable, as shown by torn (or spontaneously ruptured) vessels in otherwise perfectly successful sections. Occasionally, however, an area of normal muscle is to be found. The areolar coat is the seat of innumerable small hæmorrhages, and its meshes are thickly strewn with round cells, which lie among the lymph corpuscles, many of which appear to be proliferating, and the majority of which are deformed. Even where the muscular and areolar coats are already deeply infiltrated with round cells perfectly normal villi may be seen projecting into the lumen of the bowel. As the ulcer is approached the bases of the villi are thinned and invaded by round cells; several villi are fused together, exhibiting irregular masses of deformed cells, amorphous particles and minute blood extravasations on the free surface of the membrane. The crypts of LIEBERKUHN are swollen and filled with round cells, then gradually disappear along with the villi. They and the swollen solitary and agminate glands become crammed with nuclei, and are fused with the interstitial tissue, a free space usually occupying the centre of each follicle, the vestige, no doubt, of a minute abscess.

Coming to the ulcer itself, one first notices complete disorganisation of the structures of the bowel at its edge. The normal elements have almost totally disappeared, their remnants being mingled together, while multitudes of deeply stained nuclei (logwood) seem to form the wall of the ulcer. The muscular coat is represented by a few muscle cells. Scattered festoons of curled up fibres, along with short segments derived from the remains of the circular coat, are the traces of the areolar layer. At the point of perforation, when perforation has occurred, sprays of elastic fibres entangling large, flat, granular, nucleated

cells, the endothelial cells of the lymph sinuses, protrude on the peritoneal surface. In each field all these elements are present in inextricable confusion. An empty vessel is here and there visible; here and there also hæmorrhagic clots and groups of fat cells. On the peritoneal surface at the edge of the perforation minute nucleated cells are heaped up. On the mucous surface the border of the ulcer is undermined, agglomerations of round cells projecting so as to overhang the cavity beneath from which the slough has been cast out.

The colon is generally distended with gas, and may contain vast quantities of undigested curd. It may be perfectly normal, deeply congested or strewn with ulcers.

The solitary glands undergo a process identical with that which attacks the glands of the small intestine. When they ulcerate several may coalesce into a single patch, and series of these patches are often found extending as far as the splenic flexure or down as far as the rectum. The cæcal surface of the valve and some of the patches in the colon are occasionally gangrenous. The retro-cæcal glands are generally indurated and enlarged, and sometimes suppurating.

The mesenteric glands are swollen and hard, or soft from breaking down of their contents. On section they exude a pinkish-brown purulent fluid, and contain sloughs which readily shell out of the capsule. They vary in size; the largest I have seen were somewhat bigger than a Brazil-nut. Although they are most affected in those portions of the mesentery which correspond to the profoundest intestinal lesions, they have undergone change also in regions where the adjacent bowel shows no sign of morbid alteration. It may, therefore, be inferred that their implication is mainly primary, and only in part due to infection from the intestinal surface. This conclusion is supported by the frequent occurrence of an identical process in the bronchial glands, pharyngeal tonsil, etc.

Selecting a gland in an early stage of induration, it will be found that the swelling is due to cellular infiltration and overgrowth of connective tissue.

The liver is generally but slightly enlarged, its weight varying between 60 and 75 ounces. I have seen its surface coal-black. It is often hyperæmic, dripping with blood on section. To the naked eye the surface of a section appears singularly uniform and greasy, usually of yellowish-brown colour.

On minute examination the vast majority of the hepatic cells are, in advanced cases, found swollen, and in a condition of granular or fatty degeneration, the nuclei having disappeared, or at all events become invisible amid the oily contents of the cells.

The gall bladder is frequently tightly distended with bile, but is occasionally quite empty. In one case I found a minute ulcer on its mucous surface. The spleen is enlarged, its weight varying between 11 and 16 ounces. I have never found it increased as NIEMEYER describes it to "from twice to six times its natural size," nor is the degree of its increase any measure of the severity of the disease. It is always friable, often reduced to mere putrilage, containing yellow broken-down pulpy infarcts, chiefly towards its posterior border.

In the spleen the positive morbid appearances are chiefly enlargement of the Malpighian bodies and crowding of the softened pulp with small round cells and yellowish pigment granules.

The kidneys are commonly enlarged, often dripping on section. By squeezing the papillæ one can obtain a considerable discharge of greyish catarrhal liquid.

The renal epithelium, in limited areas of the cortical and pyramidal portions, is granular, the nuclei invisible, and in certain portions the outline of the cells themselves indistinct or altogether undeterminable. Degeneration is always, or at least generally, more advanced in the cortical portion than in the pyramidal.

The voluntary muscles I have not examined microscopically. But from the occasional occurrence of intra-muscular hæmorrhage and suppuration, as well as from the intensity of muscular weakness during the early stages of convalescence, it is probable that their fibres undergo granular or waxy degeneration identical with or similar to the forms described by ZENKER. Their degeneration may indeed be assumed *à priori* whenever the bodily temperature remains for a prolonged period at a high level.

I have examined the brain in only four cases of enteric fever, and in none of them with much result. In the first case, fatal on the 22nd day by pneumonia, there was no noticeable alteration. In the second, fatal by heart failure on the 30th day, the convolutions were œdematous, and there was about a fluidrachm of serous fluid in each lateral ventricle. In the third and fourth, death occurred on the 29th and 32nd day respectively, from septic absorption and exhaustion. In the first of these the convolutions were abnormally dry and shrunken; in the second the brain was œdematous.

Sections from the cortex were carefully examined in all. In the first and third, where the brain appeared unaltered or shrunken, I made nothing out. In the two cases where the tissue was distinctly œdematous the perivascular lymph spaces were seen to be crowded with small corpuscular bodies; several nerve cells were masked or distorted by aggregations of the same bodies, while others appeared to contain two or more nuclei.

The condition of the spinal cord I have never investigated.

TREATMENT.

The indications for treatment are generally simple.

Whoever sees in the *Temperature* the chief or only enemy to be combated will use cold baths, large doses of quinine, and the modern antipyretics. For my own part, whenever the temperature has been high enough to suggest the cold bath, I have found in the condition of the heart a sufficient contraindication. Here alcohol by stimulating the flagging cardiac muscle, and thus driving the blood through the pulmonary and surface capillaries, does a double service. It has for this reason always appeared to me to be the safest and most reliable antipyretic. Quinine has singularly little effect in lowering the temperature, and it has the disadvantages of aggravating headache, promoting delirium, diminishing any slight desire for food that may exist, and increasing diarrhœa. But when the coincidence of malarial and enteric fever is suspected a test dose of quinine (15 grains) may safely be administered. If this reduces an anomalous temperature curve to enteric form, then, and in that case only, quinine should be persisted with (unless it proves hurtful) until the curve becomes normally enteric. When this result is attained quinine is no longer of use. Such cases demand specially careful supervision of the temperature chart. Antipyrin I have found mainly useful in controlling the often agonising headache. Antifebrin I have never administered, but I have seen sufficient of its effects in producing cyanosis and cardiac distress, while its antipyretic

virtues are only temporary, to satisfy me of its uselessness and to make me suspect its safety. The officinal solution of acetate of ammonia is often of use when the skin is dry and pungent and the tongue baked. Given with lemon juice and a little syrup it is sufficiently agreeable, and it seldom fails to soften the tongue and induce gentle perspiration. It also tends to strengthen and steady the heart's action.

The amount of *Sleep* obtained must be carefully investigated at every visit. A patient is not asleep because he lies in a somnolent and indifferent state; and unless the nervous system is periodically rested by natural or provoked sleep, a condition resembling delirium tremens is induced, sufficient of itself to cause death. A gentle stimulant at night is usually effective. When this fails, chloral, with which it is wise to combine digitalis, should be given in divided doses. Tepid sponging of the whole body has a distinctly sedative effect, and where the cause of sleeplessness lies in intense headache which antipyrin has failed to relieve, a douche of cold water over the head will generally afford sufficient relief to admit of sleep with or without chloral. If everything else fails, recourse must be had to subcutaneous injections of morphia.

I have very rarely found it necessary to treat the *Diarrhœa* by astringents. In fact, when this symptom is urgent the administration of a simple enema by causing the expulsion of masses of putrid stuff with fæcal lumps or undigested food, removes what is in great measure the cause of the flux. Should it, however, continue urgent a starch and laudanum enema or a subcutaneous injection of morphia will rarely fail to reduce it within reasonable bounds.

The *Constipation* which frequently replaces or alternates with diarrhœa is best met by enemata of warm water, to which castor oil may if necessary be added. One or two evacuations of the bowels should be secured daily. During convalescence, when there is almost always constipation or ineffectual emptying of the bowel, it is from time to time necessary to administer gentle saline laxatives in order to clear away the fermenting débris of imperfect digestion.

To control *Intestinal Hæmorrhage* nothing has in my hands equalled the watery extract of Hamamelis virginica sold under the name of "Hazeline." I have published several cases of enteric fever and of dysentery in which the effect of this drug in arresting violent bleeding from the bowel could not reasonably be doubted. The doses should be large—at least 4 fluidrachms every two hours.

When the patient has become too weak to change his position without assistance and too indifferent to notice the increasing inefficiency of his respiratory movements, special attention should be paid to rolling him gently over for half an hour at a time, alternately on one side and the other, supporting his back with pillows packed behind it. So far as lung congestion depends on mechanical causes, the chance of its occurrence is materially lessened by this simple precaution.

In one case, in a fragile lady, as early as the beginning of the second week, when moderate pulmonary congestion had existed for a couple of days, the smaller tubes and air-cells throughout a large portion of both lungs suddenly filled with fluid. Suffocation was imminent, and although prostration was extreme the administration of an emetic appeared to be the only way out of the difficulty. Accordingly I gave a sulphate of zinc emetic, the effect of which was the evacuation of an incredible quantity of muco serous fluid from the tubes, and immediate relief to the breathing, with disappearance of cyanosis. Collapse,

however, swiftly followed. Ether hypodermically, brandy by the bowel, and a large draught of champagne as soon as the patient could swallow, dispelled this danger; and the case terminated in recovery.

The occurrence of *Bed-sores* should always be anticipated and guarded against. When they threaten, frequent sponging of the reddened skin with camphorated spirit, while a water-cushion is placed under the suspicious spots, will often serve to avert them. If in spite of these precautions they do occur, they should be sponged two or three times a day with a dossil of cotton soaked in red wine, and then covered with zinc ointment spread on lint, a water-cushion being now indispensable.

As prostration and indifference deepen attention must at every visit be paid to the condition of the bladder. Here I have but seldom noted retention of urine, but it has occurred. I assume that there is no danger of mistaking overflow for involuntary evacuation.

In the later stages of the fever abdominal distension is sometimes very distressing, and may reach such an extent as to exert menacing pressure on the diaphragm. But even under these conditions, the use of the long tube which is strongly recommended by many authors should be adopted with extreme caution. Deep lesions of the large intestine often extend so far down that should one unluckily fall on such a case perforation of the wall of the bowel with the tube would in all probability occur. Hot-water enemata, turpentine fomentations, and the administration of minute doses of turpentine by the mouth, generally give relief, and can do no mischief.

The administration of dilute hydrochloric acid (to the extent of a fluidounce in 24 hours) has been extolled by several writers. I have never seen the least effect on the fever or other symptoms that could reasonably be attributed to its use. But largely diluted and judiciously flavoured it forms an agreeable beverage, of which, however, most patients soon tire.

The time for quinine comes late. During convalescence, when the morning temperatures are normal or subnormal, there may be a rise to 100° or 101° between 6 P.M. and midnight. One large daily dose of quinine is at this stage invaluable.

It has never seemed to me advisable to administer alcohol in the enormous quantities recommended by some authorities. A flagging heart may often be stimulated by a moderate dose of wine or brandy, and a rising temperature controlled by the same means. A baked tongue will frequently become moist under its influence. But the occasions must be rare in which more than 4 or 5 ounces of brandy or an equivalent quantity of wine is necessary. Weak claret and water is almost always agreeable, and is certainly never hurtful; it stimulates appetite and digestion. A draught of wine-whey or a couple of ounces of milk-punch given at night will often induce sleep, and when not specially contraindicated is certainly preferable to chloral or morphia.

Much comfort is derived from sponging the entire body two or three times daily with tepid water to which a little aromatic vinegar has been added. I have often noted a fall of from half a degree to 1° in the mouth shortly after this partial bath.

The periostitis and glandular enlargements of the convalescent period are best combated by inunctions of mercurial ointment morning and evening. The gums are of course inspected every day, but I have frequently been struck by the tolerance of mercury in such cases when

administered in this way. Opium in large doses and saline laxatives have given speedy and excellent results in cases of melancholia and of hallucinations.

The *Diet* is all important, both as regards its nature and its total daily quantity. Enteric fever patients should from the first be fed every three or four hours day and night in small quantities at a time. Milk can generally be borne, and when it can it must form the chief part of the nourishment given. But it should be remembered that the dense curd of undiluted milk often proves extremely difficult of digestion,* that the patient is generally losing by perspiration large quantities of blood salts, and that the vegetables and fruit which form part of the diet of health are omitted from the ordinary diet of enteric fever. Hence it is advisable to add a little gelatine to the milk, or to dilute it with one or other of the mineral waters, lime water, rice water or barley water, or with a strong broth (strained and skimmed) in which bread and vegetables have been boiled. A mixture of equal parts of milk and of the broth just mentioned, suitably seasoned, is generally readily taken, and represents an almost perfect food. If the mixture is refused the broth should be given alternately with milk. Peptonised milk is sometimes absorbed when milk in its natural state obstinately resists digestion. Lemon juice or orange juice diluted with sweetened water is always liked, and helps to replace the vegetable element missing from the diet.

It is very important to secure the maximum of variety in the necessarily limited scale of diet. Café-au-lait; tea made with milk instead of water; eggs lightly boiled, or in the form of egg-nogg, or as batter pudding; beef juice (which when not digested turns the stools a reddish brown); ice cream in small quantities, are generally liked and are well borne. Jellies though of no nutritive value are useful as analeptics, and are grateful to the palate. Farinaceous jellies and puddings may vary the dietary, but it is doubtful whether they are readily digested.

I have almost invariably observed the rule to give no solid food until the temperature has been normal for a week. In the rare cases when I have abandoned it, it has been because, every other symptom having disappeared, and the stools having for several days completely regained the natural fæcal odour to the exclusion of all fœtor, the persistence of a fever temperature has seemed possibly due to want of a more generous diet. And, in fact, the addition of fish or of a little scraped meat has in such cases been followed by a fall of temperature.

When the patient is thirsty there is no difficulty about getting him to drink large quantities of plain cold water, or eau rougie, or fresh lemonade, or mineral water from which the gas has been allowed to escape. But when thirst is not urgent he should be encouraged to drink such diluent beverages freely.

It is hardly necessary to explain how indispensable a moderately warm and well-ventilated room is, free from currents of air that can fall on the bed; or to dwell on the need for sedulous cleanliness, changing body and bed linen daily, or whenever it has become wet

* I once examined the body of an enteric fever patient to whom from five to seven "quart" bottles of milk had been administered daily. The colon and the last 4 feet of the ileum were tightly crammed with curd. Death had been due to general peritonitis without perforation, the bowel a couple of inches above the valve having been reduced for nearly its entire circumference to its serous coat.

with perspiration or otherwise soiled; frequently washing the patient with soap and tepid water (napkins being used, and never sponges), paying special attention to all regions where folds of skin are found; or to insist on the importance of physical and mental rest in its widest sense. Thus, all large or sudden movements should be discouraged; the use of the bed-pan should be recommended from an early period; the light in the room should be carefully regulated, and never suddenly turned on at night; external noise should be as far as possible excluded, and the sound of footsteps on the floor should be deadened by loose pieces of carpet, removed and beaten every day; rustling skirts and creaking boots should be prohibited; the patient should never be suddenly roused if drowsy or sleeping; visitors should be excluded, and a judicious censorship exercised over letters and newspapers. Talking in the room should never be conducted in whispers, but should be distinct though in a low tone. The attendants should be warned not to lean upon or shake the bed while speaking to the patient; and, finally, in winter the fire should be coaled either with large lumps put on with the fingers, or, if with small lumps, then these should be brought to the room in paper bags, each containing a convenient quantity.

614.0951

CHINA.

IMPERIAL MARITIME CUSTOMS.

II.—SPECIAL SERIES: No. 2.

MEDICAL REPORTS,

FOR THE YEAR ENDED 31ST MARCH 1890.

38th and 39th Issues.

From PUBLISHED BY ORDER OF

The Inspector General of Customs.

May 8, 1894

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1894.

[*Price* $1.]

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45-56

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INSPECTOR GENERAL'S CIRCULAR No. 19 OF 1870.

INSPECTORATE GENERAL OF CUSTOMS,

PEKING, 31st *December* 1870.

SIR,

1.—It has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to { Season. / Alteration in local conditions—such as drainage, etc. / Alteration in climatic conditions. }

e.—Peculiar diseases; especially leprosy.

f.—Epidemics { Absence or presence. / Causes. / Course and treatment. / Fatality. }

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking. I have committed to Dr. ALEX. JAMIESON, of Shanghai, the charge of arranging the Reports for publication, so that they may be made available in a convenient form.

3.—Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr. ....., and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 30th September—that is, for the Winter and Summer seasons.

4.— * * * * *

I am, etc.,

(Signed) ROBERT HART,
I. G.

THE COMMISSIONERS OF CUSTOMS,—*Newchwang*, *Ningpo*, *Tientsin*, *Foochow*, *Chefoo*, *Tamsui*, *Hankow*, *Takow*, *Kiukiang*, *Amoy*, *Chinkiang*, *Swatow*, and *Shanghai*, *Canton*.

SHANGHAI, *1st January* 1894.

SIR,

IN accordance with the directions of your Despatch No. 6 *A* (Returns Series) of the 24th June 1871, I now forward to the Statistical Department of the Inspectorate General of Customs, the following documents:—

Report on the Health of Foochow for the year ended 30th September 1888, pp. 5–8.

Report on the Health of Newchwang, pp. 3, 4;

Report on the Health of Foochow, pp. 9–11; each of these referring to the year ended 30th September 1889.

Report on the Health of Swatow for the nine months ended 30th September 1889, pp. 1, 2.

Report on the Health of Ningpo, p. 12;

Report on the Health of Amoy, pp. 20–24; each of these referring to the year ended 31st March 1890.

Report on the Health of Pakhoi for the eleven months ended 31st March 1890, pp. 13–15.

Report on the Health of Kiukiang for the eight months ended 31st March 1890, pp. 16–19.

Report on the Health of Swatow for the half-year ended 31st March 1890, pp. 25–28.

I have the honour to be,

SIR,

Your obedient Servant,

R. ALEX. JAMIESON.

THE INSPECTOR GENERAL OF CUSTOMS,
PEKING.

The Contributors to this Volume are:—

HENRY LAYNG, M.R.C.S., L.R.C.P. ..... Swatow.

W. MORRISON, M.B., CH.M. ..... Newchwang.

T. RENNIE, M.D., CH.M. ..... Foochow.

C. C. DE BURGH DALY, M.B., B.CH. ..... Ningpo.

A. SHARP DEANE, L.K.&Q.C.P., L.R.C.S.I. ..... Pakhoi.

RALPH S. MILLER, M.D. ..... Kiukiang.

B. STEWART RINGER, M.D., M.R.C.S., L.S.A. ..... Amoy.

DR. HENRY LAYNG'S REPORT ON THE HEALTH OF SWATOW

For the Nine Months ended 30th September 1889.

DURING the past nine months the health of the foreign residents has been good. The port has been exceptionally free from epidemic diseases. No case of cholera, as far as I can learn, has occurred amongst the natives, greatly to their surprise, as they consider that cholera nearly always follows upon exceptionally heavy rains. In one district here cholera is called "the big water" (*i.e.*, "the flood") disease. The fall of rain in the spring and early summer months was excessive.

In the months of February, March and April minor complaints were somewhat prevalent. During this time there were six cases of acute tonsillitis; five of these occurred in one quarter of the foreign Settlement of Kakchio, one severe case being that of a visitor to the port, who was attacked three days after arrival. This latter case, together with the occurrence of five others in a small community of this kind, led me to seek for some local origin; but none could be discovered, save the damp, foggy weather then prevalent.

In March a severe case of remittent fever occurred on Double Island. This was interesting in many respects, more especially as the popular opinion here is that this island is free from malaria. Some grounds exist for this opinion (although undoubtedly erroneous), as, after careful inquiry of an old resident of over 25 years' standing, I could hear of but two previous cases of malarial fever. The probable explanation of the origin of this case is to be found in the fact that a new house was then being erected on the island, and, as a consequence, much soil was turned over that had probably remained undisturbed for years.

During the early summer months several cases of diarrhœa with fever were under treatment, the attack being usually ushered in by a sudden rise of temperature, in some cases as high as 104°. Recovery usually followed these attacks in from two to four days; two cases proved somewhat difficult to treat, and extended over a longer period of time.

The heat during the early part of July was exceptionally severe, but, fortunately, I have no case to report of sunstroke or of severe fever following exposure. One case of typhoid fever from an ocean steamer was admitted into the Seamen's Hospital. From the history of the case the fever would appear to have been contracted in Shanghai, the patient being admitted on the tenth day of his attack. After a stay of 27 days the patient was discharged. The case presented no special points of interest.

The health of the children has been very good. There were only two cases of remittent fever, a few of febricula and one of intermittent fever. This satisfactory condition is, I think, partly due to the fact that nearly all the children here spent the hot months on Double Island. Double Island is nearly 5 miles nearer the mouth of the river than Swatow, and is so situated that it dérives full benefit from all sea breezes.

The cooler nights and the excellent sea bathing attract many of our number to Double Island during the hot months. This change, small as it is, often proves very beneficial. In reference to sea bathing, it cannot be too strongly insisted upon that after sunrise or before sunset it is attended with considerable danger. Four cases of fever, fortunately slight, have occurred this summer, which were clearly due to bathing before sunset.

Through the kindness of Dr. LYALL, of the English Presbyterian Mission, I have seen much of the work at the Mission Hospital; I can therefore report with greater confidence on the prevalence of epidemic diseases amongst the natives.

Five births have occurred.

I have one death to record. Postmortem examination showed congestion of lower lobe of left lung; a large, fatty liver; granular, contracted kidney.

For the meteorological table I am indebted to the kindness of Capt. C. H. PALMER.

METEOROLOGICAL TABLE, January to September 1889.

Month.	Wind.					Barometer.				Thermometer.						Weather.		
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Calm.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Averages. Wet Bulb.	Averages. Dry Bulb.	No. of Days Rain.	Rainfall.	No. of Days Fog.
	D. h.	D. h.	D. h.	D. h.	D. h.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	D. h.	Inch.	D. h.
January	19 6	7 0	...	2 18	2 0	30.490	30.046	30.476	30.146	67.0	56.0	66.0	55.0	54.0	57.5	1 23½	2.06	1 12
February	11 6	7 0	1 12	2 12	5 18	30.500	30.024	30.470	30.080	73.0	55.0	70.5	55.0	53.7	58.8	1 22	1.53	1 18
March	12 0	11 18	1 6	1 0	5 0	30.568	29.980	30.500	29.950	75.5	56.0	72.0	59.0	58.8	61.9	1 15	2.62	3 18
April	10 0	8 18	2 12	2 6	6 12	30.348	29.890	30.250	29.736	77.0	63.0	77.0	62.0	65.7	67.6	2 18	3.89	8 18
May	8 6	10 12	5 0	1 12	5 18	30.256	29.800	30.230	29.800	84.0	71.0	83.0	71.0	74.6	76.3	5 3½	16.11	...
June	2 0	6 12	15 0	1 18	4 18	30.120	29.800	30.150	29.700	87.0	86.0	77.0	77.0	78.4	81.7	3 17	10.94	...
July	1 12	6 6	15 6	3 18	4 6	30.150	29.700	30.050	29.700	91.0	82.0	88.0	81.0	86.0	80.8	1 18	7.51	...
August	2 6	13 12	5 18	3 0	6 12	30.106	29.700	30.100	29.710	87.0	80.0	86.0	81.0	82.8	79.8	1 17	9.01	...
September	5 6	14 0	4 12	1 6	5 0	30.200	29.900	30.228	29.915	89.0	78.0	87.0	74.0	81.5	77.8	0 22	2.23	...

DR. W. MORRISON'S REPORT ON THE HEALTH OF NEWCHWANG

For the Year ended 30th September 1889.

DURING the period under review the health of the foreign residents in this Settlement has continued good.

As regards the climatal conditions, the winter was a mild one. During the hottest period of summer diarrhœa was prevalent, and, what is something unusual, one or two cases of dysentery occurred.

Measles in a mild form, two cases of small-pox among the children and two cases of typhus among the adults make up the number of infectious diseases treated.

In the small-pox cases (both aged about 2 years) I painted the faces on the fourth day with a solution containing 20 grains of nitrate of silver to an ounce of water, as recommended by Mr. HIGGINBOTTOM, with very good results.

Three births and one death have taken place during the year.

The death was that of a female, aged 13 years, due to mitral stenosis following an attack of acute rheumatism. She had suffered from acute rheumatism twice before arrival in this Settlement, with resulting mitral injury.

Happily, the year, which began with depressed trade and famine, has ended with plenty. Encouraging reports of a plentiful harvest are being daily received. The floods, which I have referred to in my Report for the previous year, in their varied results continued to occupy public interest during the earlier portion of the year under review. Great exertions were made by the foreign residents here to make the distribution of relief in the inundated districts as thorough as possible. The missionaries at Moukden, in addition to their hospital, with the friendly aid and co-operation of the native authorities, rented two unoccupied buildings—one as a refuge, the other as a fever hospital,—where the patients had the benefit of attendance from Drs. YOUNG and GREIG.

Being unable to visit any of the districts, Dr. GREIG has kindly furnished me with the following notes on treatment of patients from the famine district:—

The diseases most common are those resulting from prolonged privation and bad hygiene. In the first rank must be placed the infectious fevers.

Typhus has been very severe in those it attacked. About eight cases have come under my notice; of these, two died, and of the others, some were lost sight of before gaining much strength.

Of typhoid fever, there were few cases and comparatively mild attacks.

Cholera threatened us. At the beginning of September I saw two cases. Both made good recoveries.

The plague, properly so called, I have not met with; but many of our cases of simple fever have had boils and carbuncles, as also local and general dropsies, thus closely resembling it.

Breakbone fever, or dandy fever, is very common. Of its identity with the tropical disease of that name I am not quite sure; but it answers in almost every detail to descriptions of dandy fever in the standard works. There have been no fatal cases of it so far as I know, but the pains in the limbs and head and great restlessness complained of are often very distressing and hard to alleviate.

Diseases of the digestive system have been by far the most common. In our hospital almost everyone complains of a "sore stomach." All sorts of dyspepsia and irritable stomach prevail, probably as the result of the indigestible and raw vegetables and herbs on which the people have been living.

Persistent diarrhœa, suppurating glands and necrosis and acute inflammation of the long bones are also among the diseases prevalent.

To sum up, the great majority of our cases (about 95 per cent.) are rescued by proper feeding and clothing, combined with the judicious use of drugs.

Mr. J. ARMOUR, Harbour Master, has kindly assisted me in drawing up the following table:—

METEOROLOGICAL TABLE, October 1888 to September 1889.

Month.	Aneroid Barometer.		No. of Days on which the Temperature fell below						No. of Days on which the Temperature rose above						No. of Days on which Rain fell.	Total Amount of Rainfall.	No. of Days on which Snow fell.	No. of Days on which there were Dust Storms.	No. of Days on which High Winds blew.
	Highest.	Lowest.	°F. -15	°F. -10	°F. 0	°F. 10	°F. 20	°F. 32	°F. 50	°F. 60	°F. 70	°F. 80	°F. 85	°F. 90					
1888.	*Inches.*	*Inches.*														*Inches.*			
October.....	30.70	29.80	...	...	...	...	...	6	21	7	...	...	...	...	3	11.0	1	...	10
November...	30.74	30.02	...	...	...	...	8	20	4	...	...	...	...	...	1	0.1	...	...	8
December ...	30.84	30.06	...	...	...	4	23	6	...	...	...	...	...	...	...	...	2	1	9
1889.																			
January.....	30.84	30.15	...	...	19	11	1	...	...	...	...	...	...	...	...	...	4	...	5
February.....	30.80	30.17	...	...	1	9	14	4	...	...	...	...	...	...	...	...	1	...	7
March.....	30.66	29.88	...	...	...	...	10	16	...	...	...	...	...	...	...	...	2	4	15
April.....	30.50	29.46	...	...	...	...	...	7	11	9	...	...	...	...	5	2.3	2	...	7
May.....	30.40	30.10	...	...	...	...	...	...	4	20	7	...	...	...	3	0.6	...	...	8
June.....	...	...	...	...	...	...	...	...	...	2	19	9	...	...	9	2.6	...	1	6
July.....	...	...	...	...	...	...	...	...	...	...	6	25	...	...	6	2.3	...	...	3
August.....	...	...	...	...	...	...	...	...	...	...	10	21	...	...	8	5.6	...	...	4
September...	...	...	...	...	...	...	...	...	4	14	12	...	...	...	9	3.4	...	...	...

NOTE.—Owing to an accident to the barometer the readings were not taken during the months of June, July, August and September.

Dr. T. RENNIE'S REPORT ON THE HEALTH OF FOOCHOW

For the Year ended 30th September 1888.

During the year the number of foreign residents was about 330, and among them there were 11 births and 3 deaths.

In connexion with the former, I have to record the valuable aid obtained from the use, for alternate periods, of digitalis and convallaria maialis preceding labour, and of digitalis and chloral hydrate during labour, in a patient the subject of valvular disease of the heart, who, during the later weeks of pregnancy, suffered from symptoms of cardiac failure, palpitation, dyspnœa and dropsy with albuminuria.

One death was caused by tympanites, with sudden failure of the heart's action, while convalescing from a low febrile attack; one from typhoid fever; and another from diphtheria.

The first-mentioned case occurred in an elderly lady of very full habit of body, who had resided in China over 20 years. For over 12 months she had suffered from a morbid condition of the blood. This was at first indicated by large carbuncular boils, followed by general ill health and persistent urticaria, which, in spite of a sojourn by the sea in a neighbouring port, persisted throughout the year. On 30th December a low form of fever commenced, and on 9th January it ended in free perspiration. While the fever lasted the temperature taken in the axilla never exceeded 101° F. Although for over nine years symptoms indicative of heart weakness had exhibited themselves, chiefly by a slow, weak, intermittent pulse, the heart's action kept quiet during the feverish attack. On 10th January temperature was normal, and general improvement continued till the evening of 11th January, when I was suddenly called in to see the patient, who was suffering severely from tympanites, which she thought had been caused by a chill caught while sitting up during the afternoon. As in the morning the bowels had acted naturally, heat was applied over the abdomen and a stimulant carminative draught given. This afforded relief. On the following morning patient expressed herself as feeling very comfortable. The tympanites was relieved, but the heart's action had now become disturbed. Pulse was 120, feeble, rapid and irregular. Breathing was quickened, but temperature was normal. By frequently giving alcoholic stimulants with liquid aliment throughout the day, and an occasional dose of digitalis, some improvement in the circulation resulted, and, beyond a feeling of inability to go to sleep, patient expressed herself as feeling comfortable. Early, however, on the morning of the 13th death suddenly occurred.

The patient who died of typhoid fever was a Portuguese, aged 34 years. He was unfit for duty on 13th April, and, hoping to overcome his indisposition by a dose of purging pills, did not seek medical advice till the evening of the 16th. When I visited him he had a flushed face and complained much of headache. The pulse was rapid, and temperature 104° F. The tongue was coated; the abdomen swollen and tender; the spleen enlarged; and the motions loose. The temperature ranged about 104° till the

22nd, when considerable hæmorrhage from the bowel took place and caused the thermometer to fall below normal. On the evening of the 24th the temperature reached 105°.5, and continued high. The symptoms generally became more severe. On the 29th the temperature ranged between 105° and 106°. From past experience of antifebrin, I hoped at least to be able to control the temperature, but in this case the drug proved futile. Early on the morning of 30th April the patient died from exhaustion. There can be little doubt that the use of cathartics at the early stage of the disease had considerable influence in determining the severe type of fever and the fatal termination. Of late years, in my practice, this is the second fatal case of typhoid that has pursued a similar course after the use of purgatives at the outset of illness; and this experience, in a country where the disease is endemic and where all factors favouring the propagation of the malady are abundant, ought to act as a warning to residents against the common and thoughtless practice of resorting to purgatives for the treatment of almost every indisposition.

In the spring three other cases of typhoid fever in Europeans were treated.

On 2nd May I was called to attend the last-mentioned fatal case. The patient was an Eastern Portuguese child, aged 7 years, who had been ailing since 30th April. At the time of my visit he looked pale, prostrated, complained of sore throat, and the glands at the angle of the jaw were swollen. The tonsils were covered with false membrane, which on the right side extended as far as the posterior surface of the pharynx. Temperature was 103°; pulse 100, weak. On the following day the child looked extremely weak. A piece of false membrane on the left tonsil was hanging loose, leaving exposed a raw, bleeding surface. Breathing, other than being quickened, was unaffected, and the false membrane did not extend to the air passages. On the morning of 4th May the child died. Profound prostration being the most prominent symptom in this case, attention was mainly directed to frequent feeding with liquid aliment and alcoholic stimulants. Tincture of perchloride of iron was, every three hours, applied to the throat. Since my first visit to deceased he had been strictly isolated from other members of his family, but on 10th May a younger sister became affected. In her case the false membrane was confined to the tonsils, and the disease, pursuing a mild course, ended in recovery.

On 29th April the boy had fallen into a pond, the contents of which were contaminated with sewage and nightsoil. In the absence at that time of any trace of diphtheria in the neighbourhood, I think the origin of disease may be attributed to his having swallowed some of the impure pond water.

During the year these were the only cases of diphtheria treated. Although in former years I had attended four cases in natives, the disease has never during my residence here been epidemic.

Throughout the year the general health of foreign residents was good, and serious climatic illness was of less frequent occurrence than usual. Only three cases of dysentery—which, as formerly, yielded readily to the ordinary treatment by large doses of ipecacuanha—were met. A patient whose symptoms—fever, dysenteric diarrhœa, with circumscribed enlargement of the liver—pointed towards liver abscess, after the administration of two large doses of ipecacuanha, rapidly recovered.

The most unhealthy periods were December and January, when a mild form of remittent fever, accompanied in most cases by sore throat, was prevalent; and on the approach of summer, in May and June, many suffered from deranged liver functions. In spring, among foreign children whooping-cough was epidemic.

For the following extracts from the Pagoda Anchorage Customs meteorological tables I am indebted to Mr. Harbour Master LOVATT:—

METEOROLOGICAL TABLE, October 1887 to September 1888.

Month.	Wind.					Barometer.				Thermometer.					Weather.		
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Calm.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Max.	Min.	Mean.	Averages. Wet Bulb.	Averages. Dry Bulb.	No. of Days Rain.	Rainfall.	No. of Days Fog.
1887.						*Inches.*	*Inches.*	*Inches.*	*Inches.*	°	°	°	°	°		*Inch.*	
October.....	14 6	4 12	2 6	8 0	2 0	30.52	29.84	30.37	29.88	87.0	55.5	71.25	64.5	72.0	1 6	0.79	...
November...	19 0	2 6	0 18	7 18	0 6	30.49	30.11	30.58	30.17	79.0	47.0	63.00	60.0	65.0	1 0	0.50	1 0
December ...	18 0	2 0	1 12	8 0	1 12	30.52	30.11	30.51	30.15	79.0	37.0	58.00	49.5	58.0	0 6	0.02	0 18
1888.																	
January.....	22 0	2 18	0 12	4 18	1 0	30.52	30.08	30.56	30.10	72.0	34.0	53.00	48.0	54.0	2 6	2.55	0 6
February	16 6	2 18	2 6	5 12	2 6	30.61	30.06	30.58	30.07	68.0	35.0	51.50	45.0	51.5	3 12	3.72	0 18
March	17 12	4 12	2 6	3 18	3 0	30.48	30.00	30.45	30.02	86.0	57.0	71.50	57.5	65.5	3 0	4.01	2 12
April.....	15 12	7 12	1 18	2 6	3 0	30.41	29.40	30.34	29.40	89.0	45.0	67.00	62.5	67.5	7 6	6.62	1 18
May	10 12	8 0	6 0	3 6	3 6	30.24	29.72	30.40	29.74	90.0	53.0	71.50	66.0	72.0	4 0	6.14	2 12
June.....	7 0	8 6	9 18	2 18	2 6	30.05	29.69	30.04	29.67	94.0	60.0	77.00	73.0	77.5	4 12	8.97	0 18
July.....	13 6	6 0	6 0	3 18	2 0	30.08	29.65	30.30	29.60	99.0	69.0	84.00	78.0	85.5	2 0	1.29	...
August.....	6 18	7 6	8 18	6 6	2 0	30.07	29.52	30.06	29.34	101.0	66.0	83.50	80.0	86.5	5 0	20.14	...
September...	15 18	7 0	1 6	3 18	2 6	30.27	29.88	30.25	29.88	97.0	61.0	79.00	75.5	81.0	3 0	2.98	...

The most remarkable feature of the year was the unusual and extreme drought experienced during the first few months. In December and January nearly all the wells and ponds had become almost dry. Advantage of this was taken to empty the ponds of foul deposits previously washed into them by rains falling on their surroundings. Filthy effluvia from these heaps of concentrated sewage, and from street drains which depend solely on heavy rains for cleansing, being abundant, amply accounted for the low fever and sore throat prevalent at that time.

Towards the end of January rain in considerable quantity fell. In the first few days in February snow covered the surrounding mountains to within 500 feet of the valley. Although about the usual amount of rain fell in February and March, the ordinary level of water in wells and ponds was not reached till April.

The spring was damp and weather changeable. Throughout the summer the atmosphere was moist, hot and depressing. Although typhoons were frequently predicted, wind storms were

infrequent. About the middle of August, however, the monotony of the weather was relieved by a tremendous downpour of rain, followed by a severe typhoon. After this the heat never gained its former height.

In April, and again in August, heavy rains in the interior caused the Min to overflow its banks.

Excepting typhoid fever, which was, during the latter half of the year, unusually prevalent, natives were remarkably free from all other kinds of disease. Although typhoid is found here at all times, it was not until the end of February that its prevalence became notable. That this season was favourable for the propagation of such a disease can be readily understood. Here, rain being almost the only scavenger, the first rains after a prolonged drought would naturally bear an unusual amount of filth of all sorts into wells and ponds, and thereby increase the pollution of their scanty contents. After rain the discoloured water in these receptacles, whence the natives draw their water supplies for household purposes, indicates the source of contamination and readily accounts for the rapid distribution of the disease.

During the year cholera did not occur.

Dr. T. RENNIE'S REPORT ON THE HEALTH OF FOOCHOW

For the Year ended 30th September 1889.

Abstract of Meteorological Observations taken at Pagoda Anchorage, October 1888 to September 1889.

Month.	Wind.						Barometer.				Thermometer.					Weather.		
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Calm.	No. of Days Variable.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Max.	Min.	Mean.	Averages. Wet Bulb.	Averages. Dry Bulb.	No. of Days Rain.	Rainfall.	No. of Days Fog.
1888.							*Inches.*	*Inches.*	*Inches.*	*Inches.*	°	°	°	°	°		*Inch.*	
October.....	14	2	...	...	...	15	30.51	29.22	30.49	29.23	89	49	69.0	63.5	71.5	9	3.74	2
November...	15	...	...	4	...	11	30.50	29.21	30.54	29.82	84	51	67.5	61.0	68.0	9	1.54	7
December...	12	...	...	2	...	17	30.60	30.11	30.55	30.02	78	41	59.5	56.5	60.5	7	2.59	4
1889.																		
January.....	28	1	...	1	...	1	30.58	30.09	30.59	30.02	71	55	63.0	50.0	53.0	8	1.32	6
February....	13	1	...	2	...	12	30.53	30.00	30.53	29.97	74	54	64.0	51.0	55.5	8	2.21	4
March.....	18	...	1	6	1	5	30.62	29.91	30.59	29.95	81	46	63.5	57.5	62.0	16	6.86	6
April.....	10	3	...	1	...	16	30.29	29.80	30.25	29.80	85	42	63.5	64.0	68.5	15	5.41	7
May.....	15	2	1	1	...	12	30.28	29.82	30.25	29.73	88	51	69.5	69.0	73.5	14	5.38	3
June.....	8	3	8	...	2	9	30.06	29.74	30.01	29.71	96	61	77.5	77.0	82.5	10	1.87	1
July.....	4	4	15	...	2	6	30.02	29.75	30.04	29.70	101	76	88.5	80.5	88.5	5	1.20	...
August.....	9	3	7	2	3	7	30.10	29.62	30.09	29.62	98	70	84.0	77.5	85.5	6	5.97	...
September...	22	2	2	...	2	2	30.27	29.90	30.22	29.88	97	64	80.5	75.0	82.5	6	0.77	...

For the above table I am indebted to Mr. Harbour Master H. A. McInnes.

The elders of the community considered the past summer the warmest they had experienced. In July and August, in the foreign Settlement, the minimum temperature at night usually exceeded 80°; whilst the maximum temperature in the shade by day was generally considerably over 90°. The rainfall during the last quarter of the year under notice was exceptionally low, and the consequent drought was so severe that the second crop of rice proved, in most instances, a complete failure.

Among foreign residents, who numbered about the same as last year—namely, 330,—there were eight births and three deaths. As to the former, there was nothing unusual to relate.

The cause of death in two of the fatal cases was typhoid fever. In January a robust adult was said to have died of hyperpyrexia at the end of the second week of the fever. In the other fatal case of this disease there was a true relapse. This set in seven days after the subsidence of the temperature of the primary attack, which had lasted six weeks. In the third week of the relapse death resulted from perforation of the bowel and peritonitis.

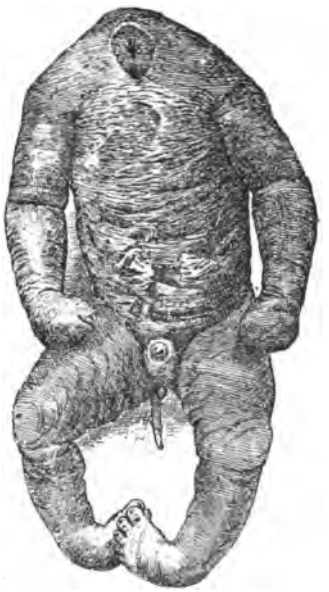
In the third fatal case death occurred during a paroxysm of angina pectoris. Deceased was 59 years of age, and had resided in Foochow for 36 years without ever having been away from the port. A well-marked arcus senilis, occasionally an intermittent pulse, with other signs of cardiac weakness, had been observed for some years before death. In the course of the 18 months preceding the fatal paroxysm there had been three attacks of angina, which had readily yielded to treatment by antispasmodics and inhalations of nitrite of amyl.

Besides an unusual prevalence of the ordinary climatic illnesses among foreigners during the winter and spring, there were eight cases of typhoid fever of a severe type.

In November many of the European children under 4 years of age suffered from ulcerative stomatitis, accompanied by fever and diarrhœa. In some instances the increased temperature lasted a week.

Notwithstanding the great heat experienced during the last quarter of the year, the health of the community was exceptionally good. The air being unusually dry favoured evaporation from the surface of the body, and thus rendered the high temperature more tolerable and the usual morbid conditions of a hot summer infrequent.

The appended photograph gives a very good illustration of deformity, due to complete arrest of development of the fœtal head:—



From year to year several cases of difficult labour among natives come under my care, and although the subject of the illustration did not and could not increase the difficulties, it was the appearance of a headless infant, whose head was supposed to be retained, that caused the native midwife to seek my assistance.

On visiting the mother I found that after an illness of four hours' duration, and half an hour before my visit, she had given birth to an acephalous monster. The placenta had been expelled, the womb had contracted, and all that was left for me to do was to assure the mother that her labour was ended.

The mother was 22 years of age, had been married for seven years, and had previously given birth to two healthy children, now aged 3 and 5 years respectively.

The infant was said to have moved and to have emitted respiratory sounds after birth. The body was well developed, the hands were clubbed, and the feet were in the condition of equino-varus. Unlike most others of the same class, it was not a twin.

Local folk-lore attributes the cause of this deformity to the mother, during gestation, sitting at night before a lamp and using a pair of scissors. The shadow of the scissors while in use is supposed to penetrate the womb and cause the deformity in the fœtus. Harelip and intra-uterine amputations of fœtal limbs are also attributed to the same cause.

DR. C. C. DE BURGH DALY'S REPORT ON THE HEALTH OF NINGPO

For the Year ended 31st March 1890.

THE general health of the foreign community has been good, that of the Customs staff exceptionally so.

There were six births and one death.

The cause of death was sunstroke. The deceased, an adult male, during unusually hot weather in July, fell, unconscious, in the street. Death occurred 20 minutes afterwards. The attack had evidently been threatening some time before, as he started from his house for his office, in a semi-conscious state, in sleeping clothes and a straw hat.

The only other cases of serious illness were one of rheumatic fever with cerebral complications, complete recovery taking place; one of heart disease; one of central amblyopia (toxic); and one very chronic case of bladder trouble.

One of the labour cases was complicated by an adherent placenta and severe hæmorrhage; the others were natural. All did well.

Dr. A. SHARP DEANE'S REPORT ON THE HEALTH OF PAKHOI

For the Eleven Months ended 31st March 1890.

Since last May the health of the foreign community has been fairly good, and no serious cases of illness have to be recorded; still, the general health of each individual is not quite satisfactory, dyspeptic symptoms being very common, caused by the want of a good mixed diet and by a scanty supply of food. The unvarying chicken, of which each person consumes from 400 to about 600 in the year, eggs, and, at times, good fish are what we have to depend upon for the animal portion of our diet for nine months of the year. From December to March we have fresh mutton twice a week and a plentiful supply of fresh vegetables, which makes a great change both in the health and appearance of everyone.

During the autumn five cases of nephrolithiasis, in a mild form, occurred among foreigners—an affection liable to occur here about the month of November.

In this climate, where profuse diaphoresis for nearly eight months in the year lessens the excretion of urine to more than half the normal quantity, the urine excreted, except when a considerable amount of fluid is taken, being high in colour and specific gravity, and frequently depositing numerous uric acid crystals, it can easily be understood how this affection comes about.

At the change from the hot to the cold season a person goes to bed perspiring; the body is only covered by pyjamas and usually a "cholera belt." About 4 A.M. the temperature falls, a cold wind blows through the room, and, being asleep, no extra covering is drawn up. Most cholera belts protect the abdomen, but not the loins. The jacket of the pyjamas is, in most cases, made too short; and if a person be seen who has been asleep for some time, it will nearly always be observed that the waist is uncovered, unless the jacket is tucked inside the trousers at the waist, which is a hot way of wearing them. This is a common mode of getting what is called a chill. The loins being thus exposed to a cold wind, the person rises in the morning feeling "out of sorts," and in a day or so is in bed sick. The kidneys have become congested, and, being already hampered by the lack of sufficient flushing, resent the increased work thrown upon them. In these cases, although calculi may not form, the urine very probably precipitates, it may be in the renal pelvis or in the ureters, causing pain from the irritation of the passage of the precipitate.

The symptoms are, after a day or so of general indisposition, a severe catching pain, aggravated by stooping, worse in the morning on getting out of bed, and changing to a gnawing pain as the day wears on. The temperature rises 5 or 6 degrees; dry skin; pulse about 100; furred tongue; anorexia; frontal headache; urine scanty, acid in reaction, generally dark coloured, usually clear when passed, but at times opaque, specific gravity 1,035 to 1,040.

Under the microscope, just after the urine has been voided, are seen numbers of dumb-bell and uric acid crystals, epithelium, and, in some cases, numerous blood corpuscles. The patients say they have caught cold and are suffering from lumbago or rheumatism. This condition continues, with little variation, until the patient is treated, as the following case will illustrate:—

In November last year a patient came to me as a bad case of rheumatic fever. He stated that about a fortnight previously he had been exposed to the sun in a boat while on a journey, and that on the same night he had got a chill. The following morning, on getting out of bed, he was seized with such a severe catching pain across the loins he dared hardly move, and he passed a small quantity of urine, the colour of strong tea. Fever then followed, and he remained in bed for some days, in consequence of pain in his back and limbs. The bowels being constipated, he took purgatives and quinine for the fever, along with other medicine, from which he received little benefit.

When I saw him he said his health was excellent until the date of the attack. His temperature now was 101°; tongue foul; breath very fetid; no appetite; bad frontal headache; complained of general muscular pain throughout the body, especially in lumbar region, on stooping. Urine was passed in small quantity, not high coloured, but opaque, as it was passed, albuminous and very acid, specific gravity 1,036. The microscope showed it to contain a large number of altered blood corpuscles, dumb-bell and uric acid crystals and much epithelium; neither tube casts nor pus could be detected.

The treatment consisted in giving, hourly, drachm doses of citrate of potash, with plenty of barley water to drink. In six hours the general muscular pains had almost disappeared, and urine was excreted in large quantities. The medicine was then reduced to 1 drachm every three hours. The following day the patient expressed himself as quite well. The bowels had acted four times, the pain in the loins had gone, he could stoop without pain, and his appetite had returned, but his tongue was still foul. The urine was neutral, contained some blood discs, but no crystals. He was directed to continue the potassium citrate (1 drachm every three hours) along with the barley water, and for diet he had tea and toast and chicken broth with rice. On the second day the urine was neutral, without albumen, and very few blood discs could be found; but the tongue still being foul he was ordered a mixture containing nitro-hydrochloric acid with tincture of nux vomica, and to take 1 grain of grey powder every three hours. This had the desired effect, the tongue became clean and the urine normal, and the patient returned to the interior three days later in good health.

The treatment in these cases is simple and speedily efficacious; namely, render the urine alkaline and induce its excretion by directing the patient to drink as much barley water as he can take until urine is passed in large quantities, and, if necessary, apply hot fomentations across the loins. All the cases were treated on the same lines and were restored to health in three or four days.

The births of two male infants have to be recorded, both of which occurred during the cool season.

Pakhoi is about the most filthy town I have seen, and the health of its inhabitants is good or bad according as the rainfall is large or small. After two months dry weather the streets become loathsome; the stench from fermenting garbage on every side and from stagnant sewage in the underground drains is past description. During a long continuance of dry weather a serious outbreak of disease will be sure to make its appearance here.

No cases of malarial fever have occurred, nor are they likely to occur over the dry sandy ground of which the Pakhoi peninsula is composed.

Several cases of diarrhœa with vomiting, met with in most parts of China, in which death followed within a few hours from the commencement of the attack, took place during July, August and September. The diarrhœa did not take on the form of an epidemic, and was caused by eating unripe or unsound fruit. However, in several small towns remote from this place epidemic cholera was reported to be raging, and an eye-witness, who passed through one of these villages, states that it was deserted, and that the only living animal he saw in it was a pig.

By a letter lately received from Lungchow we learn that bubonic plague (*yang-tzŭ-chêng*, 痒子症, or, as it is known at Pakhoi, *li-tzŭ-chêng*, 癧子症) made its appearance there during the latter part of March this year. Having originated in Yunnan, it passed through the town of Po-sê and the prefectural cities of Nan-ning and T'ai-p'ing, in Kwangsi, and thence to Lungchow, also in Kwangsi. Considering that a certain amount of merchandise passes regularly between Nan-ning and Pakhoi, it might be supposed the plague would find its way here; but up to the date of this Report no cases have occurred here since the spring of 1884.

I append a meteorological table (latitude, 21° 29′ N.; longitude, 109° 6′ E.), the temperature being taken according to the rules laid down by the Astronomer at the Hongkong Observatory.

METEOROLOGICAL TABLE, May 1889 to March 1890.

Month.	Thermometer.			Rainfall.	Month.	Thermometer.			Rainfall.
	Highest.	Lowest.	Mean.			Highest.	Lowest.	Mean.	
1889.	° F.	° F.	° F.	Inches.	1889.	° F.	° F.	° F.	Inches.
May	97	71	87.00	3.19	November	81	53	65.00	2.80
June	97	76	85.00	5.26	December	75	49	60.05	0.25
July	97	75	87.70	6.60	1890.				
August	94	72	82.70	30.23	January	77	45	68.00	3.39
September	93	72	83.80	12.48	February	87	48	79.00	0.46
October	94	63	79.00	1.22	March	86	41	61.50	3.26

DR. RALPH S. MILLER'S REPORT ON THE HEALTH OF KIUKIANG

For the Eight Months ended 31st March 1890.

I HAVE pleasure in recording that during the eight months ended 31st March there have been very few cases of serious illness among the foreign community, and no deaths.

Notwithstanding six weeks' almost continuous rain during the autumn, there has not appeared to be a greater amount of malarial fever than usual. Judging from an eight months' residence here, and the cases of illness met with among Europeans, I should say that malaria was comparatively infrequent, most of those who suffer from miasmatic chills or neuralgias having contracted the poison in other parts of China or the East, and even these state that they suffer less here than in most of the other ports.

Situated as Kiukiang is, surrounded almost entirely by water, and at times only a few feet above it, it would appear exceedingly likely that the excessive evaporation and consequent moisture, along with the flat character of the country round about, would make it anything but healthy. Such was the impression I received on getting a bird's-eye view of it from the Lu-shan Hills; but as my professional experience did not confirm it, I began to make inquiries as to the reasons for this.

Last summer was exceptionally hot, the thermometer on several occasions registering 103°. The Lu-shan range of hills, rising as they do to a height of 4,500 feet, and situated to the south, effectually shut out the wind from that quarter during the summer, and are chiefly responsible for the saying that "Kiukiang is the hottest place on the river." They, however, offer a compensation by affording the benefits of a high altitude and beautiful scenery, which are taken advantage of by invalids and others during the hot season.

From what I can learn, malaria has been much less frequent in the Concession during the last few years, owing to a number of sanitary improvements having been effected, notably in filling up stagnant pools and in elevating several of the roads and compounds. There is still room, however, for further improvements in this direction.

At present the Concession stands considerably higher than the neighbouring part of the city, many of the streets of which during last autumn were flooded for several weeks, and a vast amount of discomfort and sickness was induced in consequence.

At the hospital there are many cases of malaria; but some of them come long distances, so that it is very difficult to ascertain with any exactitude the districts where malaria is most prevalent. The low situation of many parts of the city, together with the squalor and filth,

the reeking atmosphere, the want of cleanliness and, in many instances, insufficient food, all tend to lower the vitality and make the constitution more vulnerable to the attacks of the malarial poison. In the country the same conditions do not obtain, at least to the same extent; but there the miasm is generated in the paddy fields by which the dwellings are surrounded, and there is little wonder that a considerable number of the inhabitants suffer in consequence.

The large plain lying to the west of Kiukiang is responsible for a great deal of the fever among the villages near it. It is flooded during the summer, but during spring and autumn it is marshy in many places, while the sun's rays are sufficiently strong to induce a rapid decomposition of the vegetable matter.

The same might be said with reference to the district north of the river, where many villages are situated on the dykes which have been built to keep the river in bounds. Notwithstanding these, however, there is an immense tract of country under water when the river is at its height, and very many of the inhabitants live in their boats until the water goes down again. The missionaries who visit that district report that there is always a large amount of sickness due directly to its malarial character. The width of the river, and the fact that it absorbs a certain amount of the malaria, must have a considerable influence in preventing the spread of disease to this side.

There were several acute cases of dysentery and dysenteric diarrhœa among the foreign community, but all made satisfactory recoveries. A case of tuberculosis of both lungs, with the usual phthisical symptoms, came up from Shanghai early in the autumn, but has very much improved in every respect from residence here.

One of the officers of the U.S.S. *Monocacy* developed symptoms of small-pox when in the port, and was transferred to the hospital. The disease ran a mild course, was discrete in type, and the patient made an uninterrupted and favourable recovery.

The number of in-door and out-door patients at the hospital has been steadily increasing, and the number admitted in March (135) has exceeded that of any previous month. Among these there have been many interesting cases.

One was that of a man who came in complaining of shortness of breath. On examination I found the breathing stertorous and laboured, with dulness on percussion over the whole of the right side, and breath sounds indistinguishable. I aspirated at the base, and drew off 106 ounces of pleuritic fluid, the breathing becoming more and more natural as the fluid was evacuated, until at the end it was perfectly easy.

Leprosy does not seem to be of very frequent occurrence in the immediate neighbourhood, but we have had about 20 cases during the last six months.

Two were brothers, who came 2,000 *li*, from the southern part of the province. On inquiring into their family history I found that their father and uncle had been similarly affected, and they said that there were many cases in their district. I kept one leper in the hospital for over three months, trying the effect of gurjun oil; but the man seemed to be gradually getting worse, although the treatment was steadily persisted in.

Eye diseases of all kinds have been especially frequent lately, the greater number being in a very advanced condition before relief has been sought. This is one of the most hopeful of the departments of the hospital work, as many regain at least sufficient sight to place them in a position to earn their own living or provide for their families. As the benefits of the hospital become better known, this class of cases will become still more numerous, with the result of diminishing, to some slight extent, the amount of suffering which blindness entails.

A mandarin's mother came, about two months ago, with cataract of both eyes of several years' standing. One cataract was extracted, and she returned home with good vision in that eye, promising to come back soon for the other eye to be operated upon.

One very noticeable point in operations of all kinds is the very slight tendency to inflammation among the Chinese, due in great measure to the spare diet to which they are accustomed. Strict Listerism is practically impossible, yet they seem to make marvellous recoveries in spite of their surroundings.

There have been three European children born during the period under review. One of the confinements well illustrated the danger that may follow the use of intra-uterine injections from passage of the fluid through the Fallopian tubes into the peritoneum. Rigors, with temperatures of 103° and 105°, on two occasions followed the washing out of the uterus, and at such a short interval as to make it evident that they were the result of it. At each time there were symptoms of peritonitis, but on leaving off the injections the case ran a favourable course.

I have been called to nine Chinese accouchements, all the patients having been in labour from one to four days. Out of these there were two deaths, due to puerperal eclampsia and exhaustion.

The first was a primipara, 22. Had been in labour three days, and was comatose when I arrived. On applying forceps, she had a convulsion, and I then learned that since the previous day she had been having similar fits at intervals. I put her deeply under chloroform, but had to perform craniotomy before I could get the child away. As she could not swallow, I gave her an enema of chloral and bromide, and inhalations of chloroform when the convulsions came on; but she gradually sank, and died eight hours after.

The second was a multipara, 38. Had been in labour about 24 hours. All her previous confinements had been premature. She seemed much exhausted, and on examination I found an exostosis protruding from the upper part of the sacrum, diminishing seriously the antero-posterior diameter of the pelvis. The axis-traction and Simpson's ordinary forceps had no effect in bringing down the child, and craniotomy had to be resorted to. Even after the head had been born, the shoulders would not engage in the pelvis until the arms had been brought down first. I had previously tried to turn, but could not get hold of the lower limbs to do so.

The mother rapidly sank from exhaustion after the child was born. The child was much above the average size.

One of the successful cases was where the heads of twins got locked in the pelvis; one of the children was saved.

For the following abstract of meteorological records I am indebted to Mr. LOVATT, the Harbour Master:—

METEOROLOGICAL TABLE, August 1889 to March 1890.

MONTH.	THERMOMETER.		RAIN.		MONTH.	THERMOMETER.		RAIN.	
	Highest.	Lowest.	Quantity.	No. of Days.		Highest.	Lowest.	Quantity.	No. of Days.
1889.	°	°	*Inches.*		1890.	°	°	*Inches.*	
August.....	100	68	3.52	9	January.....	65	32	1.80	5
September.....	99	65	8.05	13	February.....	69	34	5.15	13
October.....	83	55	9.09	24	March.....	68	37	6.87	13
November.....	68	46	3.86	8					
December.....	61	41	0.25	3					

DR. B. STEWART RINGER'S REPORT ON THE HEALTH OF AMOY

For the Year ended 31st March 1890.

THE summer of 1889 was unusually hot and prolonged, and both foreign residents and natives suffered considerably from the inconveniences generally attendant upon such conditions. The port was, however, quite free from epidemic cholera. Summer diarrhœa, boils and malarial fevers were the most numerous among cases treated.

Ten births and three deaths have to be recorded.

The first fatal case occurred in March 1889, in the person of an Englishman, aged 41, who had suffered from hemiplegia, due to cerebral softening. At a postmortem examination the superior surface of the brain was found deeply congested, and the dura mater slightly adherent in several places. The anterior portion of the left optic thalamus was bulging into the lateral ventricle and had degenerated into the consistence of thick cream; the right was in a similar condition, but less extensively changed. On section, the left corpus striatum showed a disc of degenerated material on its inner anterior aspect, and a smaller and more superficial zone of a similar nature was found on the right side.

The second was a death from heat fever, early in July. The patient was a German, about 40 years of age, and had exposed himself to the midday sun in a light straw hat. The temperature one hour and a half after death was found to be 108°.8. At a postmortem, 12 hours after death, the following points were observed. Rigor mortis was well marked. The posterior portions of body were covered with large, livid patches. Heart somewhat fatty; pericardium contained about ½ ounce of liquid; the wall of right ventricle was thin and the ventricle contained a little frothy blood; left ventricle empty. The blood collected in the cavity of the thorax during the examination was dark, grumous and liquid, showing no tendency to coagulate. The lungs were both deeply congested throughout. The stomach contained several ounces of pale-coloured liquid, with the usual characteristic odour. Urinary and fæcal discharges were found in the clothing.

The third case, which was one of melæna and hæmatemesis, occurred in the same month. The patient was a Japanese, aged 27. He had been a sufferer from dyspepsia more or less all his life. When called upon to attend him for this complaint, I found on examination, about a week before his death, some swelling of the abdomen, with enlargement of the cutaneous veins and fluctuation apparent, which conditions, he said, had gradually come on during the few previous weeks. The apex beat of the heart was distinctly visible, slightly to the inner side of the left nipple. Over this spot, and for an area of about 1 inch around it, a systolic murmur (probably from tricuspid insufficiency) was audible most distinctly to the right and below, not audible at back. Three days before his death he began to pass tarry stools frequently and vomited dark liquid blood and black blood clots several times during the day. Ipecacuanha, ergot and turpentine were tried, without avail. The patient gradually became weaker, refused food and died comatose. No postmortem was obtainable.

Supra-pubic Lithotomy.

The following notes on four cases of removal of stone from the bladder in Chinese by the lately-revived operation above the pubes may be found of surgical interest:—

Case I.—Tian Lai, aged 30, presented himself at the Amoy Chinese Hospital on the 18th March 1889, and complained that for many years he had suffered much difficulty in passing water, and that for the last two weeks it had been constantly dribbling away. He seemed very weak, and bent his body forward as he walked painfully and slowly along.

After examination with sound, a stone of large size was diagnosed, and the patient being thin and a good deal wasted, it could be plainly felt by manipulation between the abdominal wall and the rectum.

On the 12th April 1889 chloroform was administered, and about 8 or 9 ounces of a warm solution of boracic acid (5 grains to the ounce) was injected into the bladder, and the base of the penis ligatured with a piece of thin india-rubber tubing, which retained the liquid perfectly. The bladder could now be felt above the pubes. No attempt was made to distend the rectum. An incision was made over the symphysis pubis and carried up in the median line towards the umbilicus for about 4 inches. The fascia and muscular fibres of the pyramidalis and rectus abdominis were carefully cut through to the full extent of the wound; then, with the fingers and handle of scalpel, the glistening surface of the bladder was gradually exposed, the thin layer of fat, with the peritoneum, being scraped upwards towards the top of the incision and held there out of harm's way by the fingers of an assistant. The bladder was now steadied by hooks and punctured with a sharp-pointed bistoury near the upper portion of the skin wound, and the bistoury carried in a straight line downwards towards the pubes. The index finger of the left hand was now quickly introduced into the bladder and closely followed by that of the right, and the stone grasped between them was brought upwards to the wound in the bladder, which, however, was not sufficiently large to allow its extraction. The stone was therefore released, and the wound lengthened towards the pubes. It was then again caught and, after some gentle manipulation, removed with the fingers.

The stone was of oval shape, measuring $2\frac{1}{2}$ inches long, $2\frac{3}{16}$ inches broad and $1\frac{5}{8}$ inch thick, and weighed 5 ounces and 40 grains. On section, it showed a thick external layer of phosphatic deposit, with alternating concentric layers within of a harder and darker material, probably uric acid. The patient believed it had been growing for more than 20 years.

The bladder having been washed out with a weak solution of boracic acid, the wound was allowed to remain open, and a soft india-rubber catheter placed in the bladder, with the end hanging out at the pubic end of the wound, which was covered with a carbolised oil dressing, changed twice daily.

Recovery was very protracted, as, eight days after the operation, a large bed-sore began to form over the sacrum, and was a source of great trouble. Up to this time the temperature had not risen over 101°.4, but now gradually increased to 103°.4. The sore was treated with lead lotion and iodoform ointment, pressure being removed as much as possible by means of an air cushion.

The catheter had to be frequently changed, as the urine contained mucus, pus and phosphatic deposit. On the 24th April the catheter was removed from the wound, and some urine passed by the urethra. On the 5th May (23 days after the operation) the temperature became normal, and the general condition improved. On the 22nd May the abdominal wound had nearly healed, the bladder had closed over and all the urine was passed by the urethra. The patient was, however, kept in the hospital for several weeks longer till the bed-sore had completely healed.

Some months after his discharge this patient again presented himself to seek advice about an abdominal swelling which had arisen since he left the hospital. This was found to be a ventral hernia, about the size of half an orange, at the upper part of the abdominal cicatrix. He was advised to wear a band, but did not place himself under further treatment, and has not been seen since.

CASE II.—TEK LIONG, a Chinese boy, 7 years of age, with a stone in the bladder, was put under chloroform on the 5th August 1889. A weak solution of boracic acid was injected into the bladder, and the penis ligatured. The rectum was not distended. An incision $2\frac{1}{2}$ inches long was made from the pubes upwards, and the bladder reached in the same manner as described in Case I. It was steadied with artery forceps and opened with a scalpel, the wound being subsequently enlarged by the fingers, and a stone, with a rather rough surface, measuring $1\frac{1}{2}$ inch long, $1\frac{1}{8}$ inch wide and $\frac{11}{16}$ inch thick, weighing 230 grains, and composed chiefly of uric acid, was removed.

A drainage tube was placed in the bladder, one end being brought out of the wound, which was covered with carbolised dressing. The drainage tube was removed on the third day, as the child was by no means amenable to treatment, and the crying and struggling produced when the tube was taken out to be cleaned seemed to be doing more harm than good, as some hæmorrhage took place, blocking the tube and wound with blood clots; these being removed, however, the urine flowed freely and gave no further trouble. The skin in the neighbourhood was kept constantly smeared with boracic acid ointment, to prevent excoriation, and folded cloths, which could be easily removed, were arranged to catch the dribbling urine. The highest temperature recorded was 102°.2.

On the 5th September a little, and on the 13th September all, of the urine was passed by the urethra, the opening into the bladder having closed. The patient was discharged, with the wound firmly healed, on the 25th September.

CASE III.—TIAN, a Chinese youth, aged 17, admitted into the Chinese Hospital, suffering from stone in the bladder, was, on the 10th September 1889, placed under chloroform, and the bladder having been distended with boracic acid solution, a stone was removed by an operation similar to that performed in the two preceding cases. The bladder in this case was drained by means of a catheter in the urethra; this was, however, removed on the third day after the operation, as it was thought to produce some irritation. The temperature, having risen to 103°, subsequently fell to 101°.2, which was the highest point reached during the future progress of the case. The calculus, which was formed of uric acid, was of a flattened, oval shape, $1\frac{3}{8}$ inch long, $1\frac{1}{8}$ inch wide and $\frac{11}{16}$ inch thick, and weighed 242 grains. The treatment was the same as in Case II. A small slough formed in the upper part of the wound, which separated 13 days after the operation, leaving the surface beneath healthy. 10 days after the operation a little urine was passed by the urethra; the quantity increased daily till 9th October, when all was passed by the natural channel. Patient discharged, 18th October, with wound firmly healed.

CASE IV.—KIN, a Chinese boy, aged 8 years, suffering from stone in the bladder, was operated on, under chloroform, on the 21st September 1889. 6 ounces of weak boracic solution were injected into the bladder. The rectum was not distended. The stone was, as in the three former cases, extracted above the pubes; weighed 77 grains; measured $1\frac{3}{16}$ inch long, $\frac{3}{4}$ inch wide and $\frac{9}{16}$ inch thick; and was composed of uric acid, showing alternate layers on section. In this case the peritoneum was brought plainly into view at the upper part of the wound, as the child strained a good deal, as if about to vomit, during the early part of the operation, and a portion of the peritoneal sac was forced out, looking like a delicate, thin bladder. As soon as observed, it was, of course, kept out of danger by fingers. The bladder was steadied by a loop of fairly thick carbolised catgut being passed through the muscular wall as near as possible to the upper part of the wound, and held firmly in position by an assistant. An incision was made in the bladder with a sharp-pointed bistoury, and the stone, being small and elongated, was readily extracted by the tips of the two index fingers. The bladder having been washed out with boracic solution, the edges of the wound were stitched together by means of interrupted carbolised catgut sutures, about $\frac{1}{4}$ inch apart, through the muscular coat only. The skin wound was treated in a similar manner, and a piece of narrow india-rubber drainage tube placed between it and the bladder, with one end brought out over the pubes. The patient passed water freely by the urethra the next morning, and the drainage tube was removed. The highest temperature recorded was 101°.2. The bladder was not quite watertight, as during

the next four days a few drops of urine passed through the wound during each act of micturition; and on the fifth day, owing to the partial absorption of the catgut sutures, which were rather thin, the lower part of the abdominal wound had opened up, and the same condition, in a more limited degree, had probably extended to the bladder, as the few drops were now increased to about a fluidrachm. The wound, which looked perfectly healthy, was strapped for the next few days with adhesive plaster. On the 2nd October (11 days after the operation) no more urine passed by it, and the patient progressed favourably till 1st November, when he was discharged with the wound firmly healed. He was seen again four months later; no local trouble existed, and the scar was perfectly sound.

The revival, during the last few years, of supra-pubic lithotomy, or the high operation for stone, as it was formerly called, has been productive of much consideration on the part of surgeons as to the best method of carrying out the details of the operation and the subsequent treatment of the patient. In this connexion the following short account of the history and the various steps of the operation, written nearly 70 years ago by J. CLOQUET, at that time surgeon to the Hospital of Saint-Louis, will doubtless be found interesting:—

La taille "hypogastrique," ou le "haut appareil," fut d'abord pratiquée par FRANCO, qui ramenait la pierre au-dessus du pubis avec les doigts introduits dans le rectum. ROUSSET ensuite proposa de faire saillir la vessie au-dessus du pubis en poussant une injection dans ce réservoir, afin de l'ouvrir plus facilement. La méthode du haut appareil était tombée en discrédit, lorsque le frère CÔME la fit revivre; elle convient dans le cas de pierre très-volumineuse et dans quelques circonstances particulières. On la pratique en ouvrant d'abord la portion membraneuse de l'urètre sur un cathéter introduit dans ce canal; on porte dans la vessie par cette incision la sonde à dard; on place le malade dans une situation horizontale; on fait une incision longitudinale sur la ligne blanche au-dessus du pubis; on éloigne le péritoine afin de ne pas l'ouvrir; on fait sortir le dard de la sonde de dedans en dehors à travers la vessie et on s'en sert comme d'une sonde cannelée pour fendre cette poche membraneuse à sa partie supérieure; on extrait ensuite le calcul. Après l'opération, pour éviter l'infiltration de l'urine dans le tissu cellulaire du bassin, on place une grosse canule par la boutonnière faite au canal de l'urètre, et une mèche de linge qui sert de filtre, dans la plaie supérieure. . . . . .

Entering the bladder by means of a puncture through the membranous portion of the urethra, and subsequently draining it from the same opening, is an extremely interesting point in this old operation; and for the latter purpose a very similar proceeding has lately been employed by Mr. C. J. BOND, of Leicester, in some special cases reported in his able article in the *Lancet* (10th August 1889), which I much regret not having been able to obtain earlier, as his clear and concise views would certainly have induced me to close the bladder wound in Cases II and III. The ingenious and simple method he recommends, of fixing the bladder with a loop, as done in Case IV, is most convenient and vastly superior either to hooks or forceps.

In Case I, the stone being very large and the bladder irritable and inflamed, I thought it well to leave the wound open; in consideration, however, of the fact—which I have not seen noted in any of the cases I have read—that a ventral hernia subsequently formed, I am inclined to think it would have been better to close the upper portion of the wound, which in this case was necessarily very long to allow a stone of such magnitude to be extracted; and in all cases where the incision is of great length I believe an abdominal belt of some sort should be worn for some months after healing is complete.

It will be observed that in none of the four cases was any attempt made to distend the rectum, partly because at the time of the first operation nothing suitable could be found and partly because the distended bladder could be distinctly felt above the pubes, and in the three subsequent cases it was purposely omitted, yet in no case was there any great difficulty in reaching the bladder. If care be taken, after dividing the skin, muscular fibres and fascia, to use the fingers and handle of the scalpel in removing the cellular tissue and fat covering the surface of the bladder, there is but little danger of wounding the peritoneum if the bladder has been previously fairly distended. This last point is very important; in Case II it was noticed at the time that proceedings would have been decidedly facilitated had more liquid been injected.

The bladder wall is sometimes remarkably tough, therefore a very sharp-pointed knife should always be used in opening it. To extract the calculus neatly is not always so easy as might be imagined, for, it being important to keep the opening in the bladder as small as possible, manipulation with the tips of the fingers, as advised, is not always practicable; and so little grasping force can be employed that the stone, if large or smooth, may readily slip from between them. Polypus, or some such forceps, may be used, but I think a lightly-made pair, with fenestrated blades after the fashion of ovum forceps, would act admirably.

In Case IV the much greater rapidity with which complete power of micturition returned, and the absence of any severe constitutional disturbance, strongly point, I think, to the advisability in uncomplicated cases of completely closing the bladder wound after the extraction of the stone. This should be done with numerous, unirritating sutures, such as carbolised catgut (Mr. BOND used silk, which is probably better), the great point to be aimed at undoubtedly being to render the bladder watertight, as in Mr. ANDERSON'S case (*Lancet*, 26th April 1890), in which no catheter was used throughout, and no escape of urine took place through the wound, notwithstanding repeated and violent attacks of coughing. This surgeon further advises the bladder to be tested before closing the skin wound. It may, however, be necessary to draw off the urine in some cases, and this is best done with a soft catheter every few hours after the operation, but should be omitted as soon as possible, particularly in the case of children, who are sometimes very intolerant of the use of the instrument.

The supra-pubic operation is much less difficult to perform than lateral lithotomy. It is sometimes almost bloodless, and by careful attention to the points mentioned above, should have no additional risks. In children and in cases of large calculi, where lithotroty is inadmissible, it would seem probable that it may become the operation of the future.

Dr. HENRY LAYNG'S REPORT ON THE HEALTH OF SWATOW

For the Half-year ended 31st March 1890.

For the accompanying meteorological table I am indebted to the kindness of Captain C. H. Palmer, Harbour Master.

Meteorological Table, October 1889 to March 1890.

Month.	Wind.					Barometer.				Thermometer.						Weather.		
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Calm.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Averages. Wet Bulb.	Averages. Dry Bulb.	No. of Days Rain.	Rainfall.	No. of Days Fog.
1889.	*D. h.*	*D. h.*	*D. h.*	*D. h.*	*D. h.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	°	°	°	°	°	°	*D. h.*	*Inch.*	*D. h.*
October	10 6	12 0	3 6	2 6	3 6	30.274	29.830	30.215	29.830	86.0	73.5	83.0	76.0	75.5	79.4	1 0	2.57	...
November	14 18	11 18	...	1 0	2 12	30.516	30.041	30.492	30.040	77.0	64.0	76.0	65.0	65.3	69.5	1 13	2.37	0 12
December	16 12	10 0	0 12	3 0	1 0	30.490	30.032	30.470	30.010	69.0	58.0	67.0	60.0	56.7	60.3	0 6	0.08	0 6
1890.																		
January	9 0	15 18	...	1 18	4 12	30.502	29.948	30.484	29.846	68.0	53.5	67.0	56.0	45.9	57.8	1 23½	2.03	1 12
February	9 6	10 6	1 0	0 12	7 0	30.330	29.750	30.400	29.804	74.0	58.0	72.0	58.0	58.0	61.1	1 10	1.44	2 0
March	14 6	10 6	...	0 12	6 0	30.354	29.844	30.398	29.804	73.0	54.0	70.0	56.0	56.9	59.9	3 7	5.74	1 12

The autumn and winter were very mild.

During the six months under consideration the entire drainage system of the buildings and property of the Imperial Maritime Customs has been carefully attended to; many alterations and additions have been made which, when complete, will undoubtedly add much to the sanitary condition of the locality and prove a boon to all members of the staff.

In the reclamation of foreshore, enormous quantities of mud are being used to raise the level to that of the bund. The mud used is brought in boats from the bank of some other part of the river. The removal of vast quantities has, as far as I can learn, given rise to no disease, either at the present time or in previous years when similar operations were undertaken.

During this half-year the health of the foreign and native population has been less satisfactory than I had expected from my experience of the cool months in the early part of last year. This may be partly accounted for by a somewhat prolonged and very prevalent epidemic of influenza.

During October dysentery attacked many natives in the surrounding villages, but no case occurred among foreigners.

In December four cases of diphtheria occurred among the children of the families of two missionaries, who had all lately returned from England. The first was on the seventeenth day after arrival; the others followed at various intervals of a few days. These cases were under the care of Dr. LYALL, of the English Presbyterian Mission, who tells me that the attacks were not of a very severe nature, but, nevertheless, undoubtedly diphtheria. One case was followed by temporary loss of the power of accommodation of the eye and slight paralysis of the soft palate.

The first of these cases I had an opportunity of seeing myself. It is interesting to note that they were confined to members of two families; no others were seen in the compound, where there are a large number of native children; and no epidemic of diphtheria was prevalent amongst the natives of the district.

The origin is obscure. The children of the second family may have obtained the contagion from the children first attacked; but the primary source cannot be discovered. These are the first attacks of diphtheria that have occurred in this mission compound.

The following case is sufficiently interesting to report in full:—

A chair-coolie, strong, healthy and active, was seized at 7.30 P.M. with violent spasms of the legs and arms, clenching of the teeth, convulsive movements of muscles of the face. When seen by me at 8 P.M. his condition was as follows: lying in bed on his back, shoulders supported by a friend; a piece of bamboo firmly clenched between the teeth, an attack having just terminated; the pulse was quick and frequent; temperature 100°.8; intelligence perfectly clear; the countenance expressed extreme fear. He said he did not know why he was sick or what the sickness was. His surprise at being sick, and with a sickness that neither he nor his numerous Chinese friends understood, appeared to cause him much uneasiness.

The attacks were now recurring about once in every four minutes, each attack lasting about two minutes. During the attack the head was thrown back, the neck stiffened, the body arched (opisthotonus) and perfectly rigid, the teeth were clenched with a most powerful grip on a piece of bamboo, the arms and legs were seized with violent clonic spasms—at one second rigid and at another thrown out violently. During the attack the patient lost all control over himself; in the intervals the intellect was clear.

Immediately on the cessation of an attack a dose of chloral hydrate was given by the mouth, but this, as well as water or tea, instantly induced a fresh attack. 30 grains of chloral were now ordered every two hours, to be injected into the bowel. The attacks continuing as severe as before, at about 10 P.M. ¼ grain of morphia was injected hypodermically. In half an hour improvement commenced, and at 11.30 P.M. the attacks ceased. Patient now complained of great soreness in the throat, which was quickly relieved by a mustard poultice, and at 12 midnight sleep was obtained. During the attack the temperature did not rise above that noted at the onset.

The following morning the temperature was normal, the only remaining sign of illness being extreme prostration, which lasted for several days.

Previous to the attack patient was quite well, and denied having taken any medicine or eaten any food except his usual fish and rice. Can this be looked upon as an abortive case of tetanus, or is the more probable explanation that of poisoning? The duration of the whole attack was but four hours.

Diseases of the Testes.

Seven cases of orchitis and epididymitis combined and one of simple epididymitis came under treatment. These cases all occurred among the residents, and do not include those on board of steamers passing through the port. They were all observed during the cool months.

One case only was due to gonorrhœa; two followed cystitis; one was in connexion with a large varicocele. In the remaining four no venereal or other local cause existed. These four cases must, I think, be considered as of malarial origin. A popular idea is current here that men are frequently attacked with orchitis shortly after their arrival. The accuracy of this idea I cannot affirm; but one of the above cases occurred in a fresh arrival.

Epidemic Influenza.

During the latter part of February I had been told by several natives that an epidemic was prevailing in the surrounding villages, the symptoms of which corresponded very closely with those of "epidemic influenza."

The first case among the foreign population was recorded on 17th March, and the last on 26th April.

That the epidemic came to us from the south is apparent, as Hongkong was infected before, and Amoy after, Swatow. The native passengers from the Straits on arrival here quickly disperse to their own homes in the villages, which may possibly account for the early appearance of the epidemic in the districts outside Swatow.

It is impossible to estimate the number of natives that suffered. From all accounts, and from my own experience, the number must have been very great; of Chinamen in the employ of foreigners, a moderate estimate would be 50 per cent. The inhabitants of the villages appear to have suffered more in proportion than in Swatow, one village having the unenviable credit of being twice visited by the epidemic, many of its inhabitants being attacked a second time.

Among foreigners some 30 cases occurred, that is, about 20 per cent. of the entire population. The most general symptoms were constipation; 48 hours' fever, temperature rising to about 102°; slight bronchial catarrh, with cough commencing after the cessation of the fever; brow-ache; muscular pains and considerable lassitude; continuance of cough for some days following the attack. Coryza was seen but rarely.

Three cases were followed by acute bronchitis, all three being in men well on in middle life, and all occurred during a spell of cold, wet weather.

Two cases were followed by acute pneumonia. The first was a patient who had for months suffered from ascites; notwithstanding that the temperature ranged between 105° and 105°.6 for 36 hours, the lungs made a very fair recovery. The second occurred in a schoolboy of the

English Presbyterian Mission. Pneumonia was of a low type, and at the time of writing the consolidation has not quite disappeared.

One patient had a second attack following immediately after the first, the duration of the fever and elevation of temperature being the same in both attacks.

The extreme prostration so frequently reported as occurring in Europe was not seen here. Herpes of the neck was present once in connexion with the influenza, and two cases of catarrhal jaundice were under treatment when the epidemic was prevalent.

The Chinese appear to have suffered much less from the severity of the disease than foreigners.

Dr. A. LYALL tells me that at the E. B. Mission Hospital epistaxis was present in several cases at the onset, and diarrhœa in a few, but that vomiting was fairly frequent, and in some cases appeared to take the place of the cough.

In natives quinine proved the most successful medicine. The general treatment in foreigners consisted in a purge and, in the early stage, some simple febrifuge, and, later, a quinine tonic. In some of the first cases quinine was tried in the early stage, but no beneficial effects followed: it neither shortened the attack nor influenced the temperature, as far as one could see; as a tonic, after the first stage, it proved of great value.

Antipyrin was never prescribed; antifebrin, once successfully, to reduce a temperature of 105°.6, and twice in another case, to reduce a temperature of 105°.4, unsuccessfully.

Five births have occurred among the foreign population.

Two cases of small-pox from a coasting steamer were admitted into the Seamen's Hospital. The first died, and the second recovered. The first patient was admitted in an absolutely hopeless condition, with confluent small-pox, death taking place 36 hours after admission. This is the only death that has taken place during the six months.

614.0951

CHINA.

IMPERIAL MARITIME CUSTOMS.

II.—SPECIAL SERIES: No. 2.

MEDICAL REPORTS,

FOR THE HALF-YEAR ENDED 30TH SEPTEMBER 1890.

40th Issue.

PUBLISHED BY ORDER OF

The Inspector General of Customs.

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INSPECTOR GENERAL'S CIRCULAR No. 19 OF 1870.

INSPECTORATE GENERAL OF CUSTOMS,

PEKING, 31st *December* 1870.

SIR,

1.—IT has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to { Season. / Alteration in local conditions—such as drainage, etc. / Alteration in climatic conditions. }

e.—Peculiar diseases; especially leprosy.

f.—Epidemics { Absence or presence. / Causes. / Course and treatment. / Fatality. }

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking. I have committed to Dr. ALEX. JAMIESON, of Shanghai, the charge of arranging the Reports for publication, so that they may be made available in a convenient form.

3.—Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr. ....., and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 30th September—that is, for the Winter and Summer seasons.

4— * * * * *

I am, etc.,

(Signed) ROBERT HART,
I. G.

THE COMMISSIONERS OF CUSTOMS,—*Newchwang*, *Tientsin*, *Chefoo*, *Hankow*, *Kiukiang*, *Chinkiang*, *Shanghai*, *Ningpo*, *Foochow*, *Tamsui*, *Tainan*, *Amoy*, *Swatow*, and *Canton*.

SHANGHAI, *1st February* 1894.

SIR,

IN accordance with the directions of your Despatch No. 6 *A* (Returns Series) of the 24th June 1871, I now forward to the Statistical Department of the Inspectorate General of Customs, the following documents:—

Report on the Health of Chinkiang, pp. 1–3;

Report on the Health of Newchwang, pp. 16, 17; each of these referring to the year ended 30th September 1890.

Report on the Health of Ichang, pp. 4–6;

Report on the Health of Swatow, pp. 18, 19; each of these referring to the half-year ended 30th September 1890.

Report on the Health of Hoihow (Kiungchow) for the ten months ended 30th September 1890, pp. 7, 8.

Report on the Health of Tamsui and Kelung for the three years ended 30th September 1890, pp. 9–15.

I have the honour to be,

SIR,

Your obedient Servant,

R. ALEX. JAMIESON.

THE INSPECTOR GENERAL OF CUSTOMS,
PEKING.

The Contributors to this Volume are:—

J. A. LYNCH, M.D., M.CH. ..... Chinkiang.

E. A. ALDRIDGE, L.M.& L.K.& Q.C.P.I., M.R.C.S. ..... Ichang.

WILLIAM KIRK, M.D., M.CH. ..... Hoihow (Kiungchow).

ALEXANDER RENNIE, M.B., C.M. ..... Tamsui and Kelung.

W. MORRISON, M.B., CH.M. ..... Newchwang.

HENRY LAYNG, M.R.C.S., L.R.C.P. ..... Swatow.

Dr. J. A. LYNCH'S REPORT ON THE HEALTH OF CHINKIANG

For the Year ended 30th September 1890.

Meteorological Table, September 1889 to September 1890.

Month.	Wind.						Barometer.		Thermometer.		Rain.	
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Calm.	Highest.	Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
1889.							*Inches.*	*Inches.*	°	°		*Inches.*
September	14	8	1	3	4	...	30.42	29.75	96	58	10	4.92
October	7	9	...	2	12	1	30.63	29.87	83	40	13	7.47
November	10	13	6	...	...	1	30.84	29.95	67	35	4	1.24
December	7	3	1	9	11	...	30.93	30.19	57	25	...	...
1890.												
January	15	2	1	6	7	...	30.96	30.10	54	27	4	1.18
February	14	6	...	3	5	...	31.00	29.82	67	30	8	1.95
March	15	6	...	3	7	...	30.90	29.93	61	30	8	4.19
April	5	8	4	2	11	...	30.53	29.65	84	47	10	4.93
May	8	11	2	...	10	...	30.40	29.74	93	48	7	3.98
June	2	17	1	...	10	...	29.95	29.70	97	63	11	5.55
July	2	19	4	2	4	...	29.84	29.65	95	67	7	4.61
August	7	10	...	2	12	...	29.95	29.70	96	70	6	4.41
September	14	5	...	1	10	...	30.16	29.80	90	60	2	2.42

Note.—Readings at 3 A.M., 9 A.M., 3 P.M. and 9 P.M.

During the past 12 months three births occurred among the foreign population of this port. The deaths were also three in number: a child, from acute tuberculosis; an adult, from small-pox; and an infant of three weeks old, from inanition.

This last was a curious case. The child was born at full time. The quantity and quality of the milk, the formation of the nipple and of the infant's mouth were quite normal; yet it was found impossible to induce it to take the breast. Artificial feeding proved a failure. Diarrhœa supervened, and the infant rapidly sank.

The following have been the chief cases of illness:—

Small-pox	4	Pneumonia	1
Typhoid fever	2	Laryngeal and bronchial catarrhs	5
Measles	4	Gout	1
Influenza	5	Tonsillitis	3
Acute tuberculosis	1	Summer diarrhœa	5
Malarial intermittent	1	Chronic diarrhœa	2

Three cases of small-pox were treated in March. In one the eruption was confluent, but the patient made an excellent recovery. He had been vaccinated in infancy; two faint cicatrices were visible. The other two were mild attacks of varioloid. On the first appearance of the outbreak the members of the Customs staff and most of the other foreign residents were vaccinated. It is needless to say that no freshly-vaccinated person was attacked.

A severe and rapidly-fatal case occurred in May:—

Miss A., 28, missionary, recently arrived from Yang-chou, where she had nursed a small-pox case, was seen on Friday, 9th May. Had been ill since Wednesday evening with fever and pain in the back. Temperature 102°. A few red spots of doubtful character on left arm and chest. Had not been vaccinated since childhood; two distinct marks.

On the 10th and 11th a copious papular rash came out, covering the whole body. The temperature kept at 104°. There was much præcordial pain, constant vomiting, sleeplessness and delirium.

On the 12th the temperature fell 1 degree, none of the other symptoms abating.

On the 14th the eruption had become vesicular, with large confluent areas. Throat very sore; tongue dry and black. Temperature 102°–103°.

On the 15th black patches of hæmorrhage began to make their appearance beneath the vesicles, chiefly on inner and outer surfaces of thighs. Temperature 101°–102°. Pulse 112, feeble. Little delirium.

On the 16th the hæmorrhagic patches had increased greatly in size, and were spreading on the trunk. Swallowing was extremely difficult and brought on hiccough. Pulse 120, regular, very feeble. Temperature 98°.

Next day she died.

The above case will be recognised as belonging to the variety known as "hæmorrhagic vesicular," the connecting link between confluent and "black" small-pox.

Towards the end of March influenza paid us a visit. The few cases among the foreign residents were not of a serious character. The treatment adopted consisted in rest and the administration of a placebo. Among the Chinese, however, it raged with considerable virulence and was the cause of many deaths.

The summer has been exceptionally mild, with cool nights throughout, and neither the health nor comfort of the residents was much affected by the heat. A severe epidemic of cholera is reported from Yang-chou; but in the immediate neighbourhood of Chinkiang the mortality

has been much smaller than in former years. It is a very remarkable fact that no case of Asiatic cholera has ever been recorded among the foreign community.

Cases of beriberi are met with every summer, though the disease does not seem to be very widely prevalent. Both the "wet," or acute, and the "dry," or chronic, forms are found. There is an impression, I think, that only adults suffer from this disease; but three fatal cases, which I saw in the summer of 1889, were all in children under 12 years of age. The symptoms of this curious malady form a perfect clinical picture of multiple neuritis. Moreover, there is little room for doubt that its essential cause is a specific micro-organism. Of course, it is impossible to verify such a hypothesis in China.

The following case of retained ovum may be of interest:—

Mrs. B., foreigner, multipara, was attended in her fourth confinement in April. She had gone a little past her full time, but felt sure the child was dead, as she had felt no fœtal movements since the seventh month. After a few feeble pains the ovum was expelled entire. On tearing open the membranes, two sodden and shrivelled fœtuses, apparently of the fifth month, were found attached to a common placenta. The cords were remarkably long, and were tightly tied about the middle of their length in a veritable Gordian knot. The abnormal length of the cords, and consequent abnormal mobility of the fœtuses, had resulted in mutual strangulation. There was not the slightest evidence of putrefaction. The mother recovered without a bad symptom.

DR. E. A. ALDRIDGE'S REPORT ON THE HEALTH OF ICHANG

For the Half-year ended 30th September 1890.

THE following abstract is from the meteorological observations taken at the Custom House:—

METEOROLOGICAL TABLE, April to September 1890.

MONTH.	THERMOMETER.				BAROMETER.		RAINFALL.	
	Highest.	Lowest.	Average Highest.	Average Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
	°	°	°	°	*Inches.*	*Inches.*		*Inches.*
April	90.0	45.5	74.5	57.0	30.32	29.40	13	8.01
May	95.0	47.5	78.5	64.1	30.13	29.58	12	5.68
June	101.5	64.5	86.4	71.4	29.80	29.51	8	4.44
July	99.3	72.2	90.5	76.5	29.72	29.42	17	13.50
August	99.5	69.5	92.7	76.0	29.86	29.56	9	3.24
September	95.8	58.5	88.0	68.0	30.11	29.71	5	0.83

The site of the town of Ichang (latitude, 30° 14′ 25″ N.; longitude, 111° 18′ 34″ E.), well above high-water mark, on the north bank of the River Yangtze, is a good one, so that drainage and other sanitary arrangements might be simply and effectually carried out. At present, however, the system adopted is worse than useless, for drains that leak on all sides are laid along the streets and are never flushed, except by heavy rain.

Foreigners reside outside the South Gate, and most of them enjoy a good river frontage; their houses are dry, well drained and may be considered healthy.

During the period under review the following cases among foreigners were attended:—

Ague	8	Influenza	7
Cholera	1	Hæmorrhoids	1
Muco-purulent ophthalmia	3	Hepatic congestion	2
Dysentery	2	Ulcers of leg	1

The above list is not satisfactory for such a small community. Though malarial poisoning was not absent, it fortunately was only productive of a fever of a mild and intermittent type;

whereas among the native population it very frequently caused remittent fever of severe character.

The case of a very old resident in China presented the symptoms of Asiatic cholera. He had been accustomed to drink water unboiled and unfiltered. Had painless diarrhœa two or three days, and sleepless nights. When seen, vomiting and purging had been going on two hours; the body was cold and damp; temperature subnormal; pulse, feeble and running, 140; cheeks drawn in; tips of fingers bloodless; vomit and stools characteristic; thirst; pains in limbs; restlessness, and apprehension of impending death. Spirits of camphor in full doses, a little brandy and acidulated effervescing drinks were administered; sinapisms over heart and calves of legs were applied; and, later on, ½ grain of morphia was injected. Reaction set in well, with only a slight relapse after five hours. On the third day vomiting and diarrhœa occurred after taking some hot soup. Recovery was interrupted by hepatic disturbance, and was followed by a crop of large boils, which formed an almost complete belt round the body at the level of the epigastrium.

Dysentery was treated by a large dose of ipecacuanha, preceded by opium. In the first case it was contracted while travelling down the river; in the second, the patient had been working among foul-smelling, wet silk, and, supposing he had diarrhœa, took two pills and an enema before applying for relief.

The influenza epidemic, which reached Ichang in April, differed only from that which I personally experienced and witnessed in London at the beginning of the year in the mildness of the chest symptoms, which never indicated more than slight bronchial inflammation. There were observed here, in one case or another, the same sudden invasion and rapid rise of temperature, frontal headache, conjunctival injection, sore throat, epistaxis, earache, severe aching of bones and general prostration amounting to inability to turn over in bed, abdominal pain and subsequent debility.

The summer has been exceptionally mild and pleasant, but, as often noticed at the river ports, such a season does not necessarily prove healthy; rather, indeed, may the reverse be expected. The natives affirm that there has not been so high a rate of mortality among them for upwards of 20 years. They have suffered greatly from malarial fevers, which have been extremely fatal; from the fact that whole households have been attacked, these fevers have naturally been considered contagious. But beyond influenza and a few cases of small-pox, nothing of that nature has been observed. Native treatment seems to have been almost useless, the administration of a necessary simple purgative in cases seen having been neglected. At the Shan-t'ang a large quantity of native medicines and as many as 20 to 30 coffins daily were given away; the great necessity for the latter certainly did not speak well for the efficacy of the drugs supplied. Foreigners did much good by bestowing quinine on the sick they came in contact with, and it is to be regretted that the knowledge of such a specific against malaria is not more general among the well-to-do Chinese, who are by no means backward with their money in showing practical sympathy with their suffering neighbours.

The heavy rains during July supplied plenty of moisture to the growing rice; in addition, the small reservoirs for storing water from the hills were allowed to empty themselves for irrigation purposes, and the crop was good. The wet weather was succeeded by an unusually dry August and September, the rainfall being only 3.24 and 0.83 inches respectively, and hence there was a general drying up of the paddy fields, which lie at the back of the town, between

it and the hills. This low ground, though quite a narrow belt, is probably the chief source of the malaria which attacks residents here. The epidemic of influenza may have had some share in producing the susceptibility to malarial influence.

The Church of Scotland Mission lately erected a small hospital in the city, and opened it shortly after my arrival, last March. There are a male and female ward, out-patient department, operating room and dispensary. The attendance has been good, the applicants numbering upwards of 3,000 during the six months. In August and September nearly half the patients who sought relief suffered from malarial fevers or their sequelæ, which were often severe—anæmia (partaking of the pernicious type), enlarged spleen (often the so-called ague-cake), hepatitis, jaundice, ascites and œdema of lower limbs being frequent. Cases of dysentery and cholera have been comparatively rare. Leprosy has not been met with, and elephantiasis only twice. Foul ulcers and skin affections, mostly parasitic, though often of a low, tubercular nature, have constituted a large proportion of the diseases treated.

DR. WILLIAM KIRK'S REPORT ON THE HEALTH OF HOIHOW (KIUNGCHOW)

For the Ten Months ended 30th September 1890.

SINCE my arrival in Hoihow—in November 1889—the health of the foreign community has been good. No deaths occurred, and there were few cases of serious illness; excepting a short visit from the influenza epidemic, no other epidemic or endemic disease prevailed. No case of cholera was reported, a circumstance rather unusual. Several minor accidents and cases for operation came under my notice, but few of particular interest.

The weather was favourable to health, the summer months unusually mild and the nights comparatively cool. The two hottest days were the 3rd August and the 3rd September, the thermometer standing at 95° and 94° respectively. The usual afternoon thunderstorms, accompanied by much rain, commenced early in the spring and were of frequent occurrence throughout the summer. These heavy showers are a great boon, serving as they do to cool the atmosphere and to clear from the drains, sewers, etc., the accumulations of sewage and other offensive matters which are allowed to collect there.

Dysentery and diarrhœa approaching dysentery were almost entirely absent, probably due to the fact that there was no excessive range of temperature.

In the winter and early in the spring the influenza epidemic made its appearance, but in a comparatively mild form. Many natives, especially soldiers in barracks and people living in crowded districts, were attacked, but few deaths were reported.

The usual symptoms were slight fever, headache, pain in the back and limbs, great depression and general weakness, slight cough and sore throat. The treatment I adopted consisted of a few days' confinement to the house, attention to the bowels, antipyrin for the fever and pain and an expectorant for the cough.

In March a missionary was brought from the interior suffering from an attack of pneumonia, affecting both lungs.

He had already been ill seven or eight days, was much emaciated and profoundly exhausted. The temperature for the first few days ranged from 104° to 105°; the pulse rapid and very weak. At times he was delirious. The usual symptoms were present, and the physical signs were clearly marked. Under the usual treatment and careful nursing he did very well; but it was only after a prolonged visit to Macao that his health and strength were fairly restored.

An intractable form of skin disease of the scrotum and parts about came under my notice during the hot months of the summer.

The case at first appeared to be one of local erythema, due probably to the friction of the dress producing a chafe or to the rubbing together of the two surfaces of skin. The symptoms then present were simply diffuse redness, itchiness and tingling and a slight serous discharge. As treatment, mildly astringent and sedative lotions and dusting powders of various kinds were tried, but without the desired result. This condition of affairs lasted for six weeks, when the disease took on a new aspect. The redness

became more intense; the skin sodden; there was much pain and tenderness on the slightest movement; the orifices of the sebaceous glands were much enlarged; and a copious, ill-smelling, oily discharge was substituted for the previous serous oozing. Different applications were again tried, but the disease baffled all treatment, and it was only when the cool weather set in, three months later, that the symptoms began slowly to subside.

The only surgical case of any interest is the following:—

During the New Year celebrations, when there was much cracker-firing and gun practice, a coolie was brought to me suffering severely from the effects of a gunpowder explosion. The gun, a smooth bore, muzzle-loader, had been fired once, and preparations were being made to fire it again. The charge, simply powder, was being rammed home, when it suddenly went off. The gunner was thrown several yards distant, and lay on the ground mutilated and insensible. He was badly injured in many places, but the left arm and hand suffered most. Most of the structures on anterior part of lower third of arm and palmar surface of hand were torn away. The radius and ulna, splintered in many places, were here and there exposed, and fragments of the ramrod and other foreign matters were deeply embedded in the wounds. After freeing the parts from the broken leaves, which his comrades had used to arrest the hæmorrhage, and from as much as possible of the powder and other foreign substances, I thoroughly cleansed with carbolic lotion, sutured where a suture was possible, and dressed with carbolic oil. With the addition of iodoform, this dressing was repeated at intervals during the following four weeks. The case did remarkably well; but owing to the prolonged rest, the great destruction of tissues and the resulting cicatrix, the wrist joint became firmly ankylosed.

The appended abstract is taken from the Custom House meteorological tables:—

METEOROLOGICAL TABLE, January to September 1890.

Month.	Thermometer.		Rain.		Barometer.	
	Maximum.	Minimum.	Number of Hours.	Quantity.	Highest.	Lowest.
	°	°		*Inches.*	*Inches.*	*Inches.*
January	75	53	127	3.69	30.35	29.92
February	88	61	14	0.25	30.36	29.76
March	85	55	55	1.23	30.34	29.87
April	93	61	32	7.21	30.23	29.80
May	94	75	64	9.57	30.00	29.79
June	93	76	35	4.04	29.94	29.74
July	93	76	14	1.92	29.96	29.70
August	95	74	20	5.15	29.98	29.75
September	94	66	61	7.46	30.00	29.68

DR. ALEXANDER RENNIE'S REPORT ON THE HEALTH OF TAMSUI AND KELUNG

For the Three Years ended 30th September 1890.

DURING the period under review the health of the foreign community has been fairly satisfactory, with the exception of the usual prevalence of malarial fever. The summer of 1890 has been very cool, the thermometer on no occasion registering over 95°, while in 1888 and 1889 a temperature of 99° or 100° was reached on several days. In spite of the moderate temperature, however, the average amount of sickness prevailed during the summer months. As a general rule, the frequency and intensity of diseases of malarial origin may here be estimated by the degree of solar heat; but this standard is liable to be modified by the amount of rainfall preceding the hot period and also by the extreme variations between the daily and nightly temperatures. This latter factor would seem to determine the attacks of fever experienced here in late autumn, when the weather is dry and bracing, but when the range of variation between the day and night readings of the thermometer sometimes exceeds 20°.

As in former years, the disease has been almost confined to residents at the port. The immunity enjoyed by residents in Twatutia may be explained by several causes:—

1. *Absence of Rank Vegetation.*—The plain on which the town is built is exceedingly fertile, bearing rich crops of sugar cane, rice, indigo, etc., so that every patch is cultivated and no waste land is to be found in the neighbourhood of the Settlement. In the immediate neighbourhood of the port, on the contrary, vegetation is rank, banyan trees thrive on the hillside, with a dense undergrowth of shrubs and creepers, while the surrounding country presents large tracts of uncultivated ridges, with well-watered paddy fields between.

2. *The Nature of the Soil.*—Beneath the surface soil of the plain sand extends to a considerable depth. Artesian wells have been bored to a depth of 118 feet without encountering rock, penetrating a 30-foot layer of sand, and under that a bed of clay. The soil is therefore porous, and surface water quickly drains off. The volcanic soil of the port, on the other hand, is, on the surface, of the nature of clay—stiff and tenacious after rainfall, hard and baked in dry weather, with cracks leading to the damp subsoil. It has now come to be pretty generally admitted that efficient subsoil drainage is the most important factor in rendering a malarial soil healthy.

3. *Absence of Tidal Mudflats.*—10 miles inland, where the town of Twatutia is situated, the tidal influence is slight, so that at low water there are no large tracts of exposed mud, as at the outlet of the river.

4. *The Houses occupied by Foreigners are all of Two Stories.*—Although the physical conditions above alluded to exercise an undoubted influence in securing a healthy environment, the condition of the dwellings must be regarded as still more important. Natives living in ordinary Chinese houses suffer to a somewhat less extent than their brethren living under similar conditions at Tamsui, but by no means present the contrast in this respect that well-housed foreigners do when compared with those occupying bungalows at the port. During the two years 1888 and 1889, among 18 foreigners residing at Twatutia only two cases of fever came under my observation, and these but slight; whereas during the same period at Tamsui every occupant of a one-storied house suffered from one or more attacks. Of course, it may be said that the field of observation here is too limited to enable any wide generalisation to be made, but so far as our experience goes it amply confirms the truth of this fact, so well recognised elsewhere.

During the past decade views as to the essential cause of malarial diseases have considerably changed, but prophylaxis and treatment remain the same. Whether we hold that malaria is a "telluric poison" of a gaseous nature, or that it acts in virtue of a "living ferment," the fact remains that the maximum of danger is in the evening and early morning, and that the influence of the morbific agent diminishes as elevation above the level of the ground increases.

During the past three years I have, in the treatment of fevers, made extensive trial of antipyrin and antifebrin, and have reason to be well satisfied with the results. Although, unlike quinine, they exert no specific influence, they are invaluable in the sudden access of fever in intermittent and remittent attacks, accelerating the sweating stage and relieving the oppressive head symptoms. During the past summer I was called to three cases of intermittent fever, where the temperature ranged from 106°.5 to 107°. In from 10 to 15 minutes after the administration of antifebrin perspiration was profuse, and the temperature rapidly declined, with comparative comfort to the patient. In remittent cases I find it a good rule to administer a dose whenever the thermometer registers over 103°, and follow up with a full dose of quinine on the consequent fall of temperature, provided the ordinary remissions are not well marked. Among Chinese from the mainland I occasionally come across a fatal form of fever, where remission is exceedingly slight or imperceptible, with a persistent temperature of 104° or 105°. The patient has not been exposed to the sun, nor does he present symptoms of enteric fever. He has usually been five or more days under native treatment, is exceedingly wakeful and occasionally delirious. Such are probably cases of remittent fever where, from neglect of proper treatment at the outset, the characteristic remissions are lost. At this stage quinine is absolutely without effect. An occasional dose of antifebrin affords considerable relief, and, with the administration of hypnotics, constitutes the only efficient medicinal treatment. In 6-grain doses, dissolved in 40 minims of rectified spirit and then diluted, the action of antifebrin is prompt and reliable. Thus administered I have not observed toxic symptoms except in one or two instances, where too frequent repetition of the dose produced slight cyanosis and feeble pulse. In cases of neuralgia and brow-ache of malarial origin antipyrin is usually more efficient in relieving pain, the patient continuing to take small doses of arsenic.

Where quinine is not taken in solution, I think a decided preference should be given to tabloids or gelatine-coated pills. Their action is prompt as compared with pearl-coated pills, which are apt, as I have seen in subjects of feeble digestion, to pass through the system unabsorbed.

During April and May of 1890 many cases of influenza occurred among the natives, but most of the foreigners escaped. The leading symptoms were fever, ranging up to 103° or more, ushered in by chilliness and muscular pains and followed by catarrhal symptoms, chiefly bronchial, and much depression. The average duration of the disease was about seven days. The headache and lumbar pains, so well marked in cases in Europe, were by no means prominent symptoms—in fact, the disease more resembled an attack of malarial fever, with bronchial catarrh superadded. The natives were rather at a loss to account for the nature of the disease at the outset, as at this season of the year cases of fever are not common, and chest complaints unusual.

During the period under review three births and one death were recorded. Three deaths also occurred among non-residents.

1. *Death from Fracture of the Skull.*—C. A., aged 26, Norwegian sailor. At 3 A.M. on 13th March 1888 arrived by rapid boat from Kelung, where he had been injured on the previous day. It appears that during a scuffle he had fallen down the hold of a ship, alighting on his head among iron rails. At 9 A.M. his condition was as follows:—Face flushed; skin hot and dry. Temperature in axilla 104°.8; pulse 120; respiration 48. Patient almost unconscious. Pupils equal and abnormally sensitive to light. Coughs occasionally; no phlegm expectorated. Is very restless; when touched he commences to push with his hands and to kick off the bedclothes, then tosses to and fro and keeps aimlessly feeling his genital organs—a most persistent symptom. On the scalp, over the right occipital region, is a contused wound 2 inches long, running from the vertex backwards. Pressure here causes intense pain, so, in a less degree, pressure along the spine. Fracture of the skull suspected, but not ascertained. Dulness and crepitation over the base of the right lung from the fifth rib downwards. Heart sounds loud all over the chest. No fracture of the ribs.

6.30 P.M.—Pulse rapid and feeble. Temperature 103°.2. Patient quiet. Sweating. Slight stertor and puffing of the cheeks. Has taken a little nourishment. Bowels moved after taking 2 drops of croton oil.

14th March.—Somewhat improved. Respiration less rapid. Temperature 102°. Crepitation over the left side of the chest. Patient drowsy, but easily roused, when great restlessness is manifested—tearing the bedclothes and throwing his arms about.

9 P.M.—Temperature 101°. Pulse 110. Has taken nourishment frequently.

15th March.—Has passed a good night. Can reply to simple questions. Complains of pain in the head and left side of body. Ideas confused.

6 P.M.—Has relapsed into unconsciousness. Breathing slow and stertorous. Pulse irregular. Eyes insensible to light, covered with film of mucus; right pupil dilated. Loss of power in left arm and leg.

16th March.—Temperature 101°. Quite unconscious. Right pupil much dilated. When stimulated moves right arm feebly.

6 P.M.—Complete paralysis of limbs. Laboured breathing.

Died at 11 P.M.

Postmortem Examination.—On removing the scalp much effused blood found in occipital region, especially towards the right side. For a space of 2 inches there is separation of the suture between occipital and right parietal bones, and also slight separation of the suture between occipital and right temporal bones. A linear fissure runs transversely across the superior angle of the occipital bone. Much effused blood found between the dura mater and the temporal bone, especially over the petrous portion. The whole right side of the brain on its outer and under aspect is bruised. Signs of inflammation are visible in the cortical substance of the temporo-sphenoidal lobe, which contains a little pus mixed with blood. Left side of brain apparently healthy. No disease of ventricles or other parts. Both lungs much congested. Large amount of mucus in the bronchi. Heart healthy. Left ventricle empty; right ventricle contains some dark blood. Contents of abdomen healthy, with exception of the spleen, which is enlarged and softened.

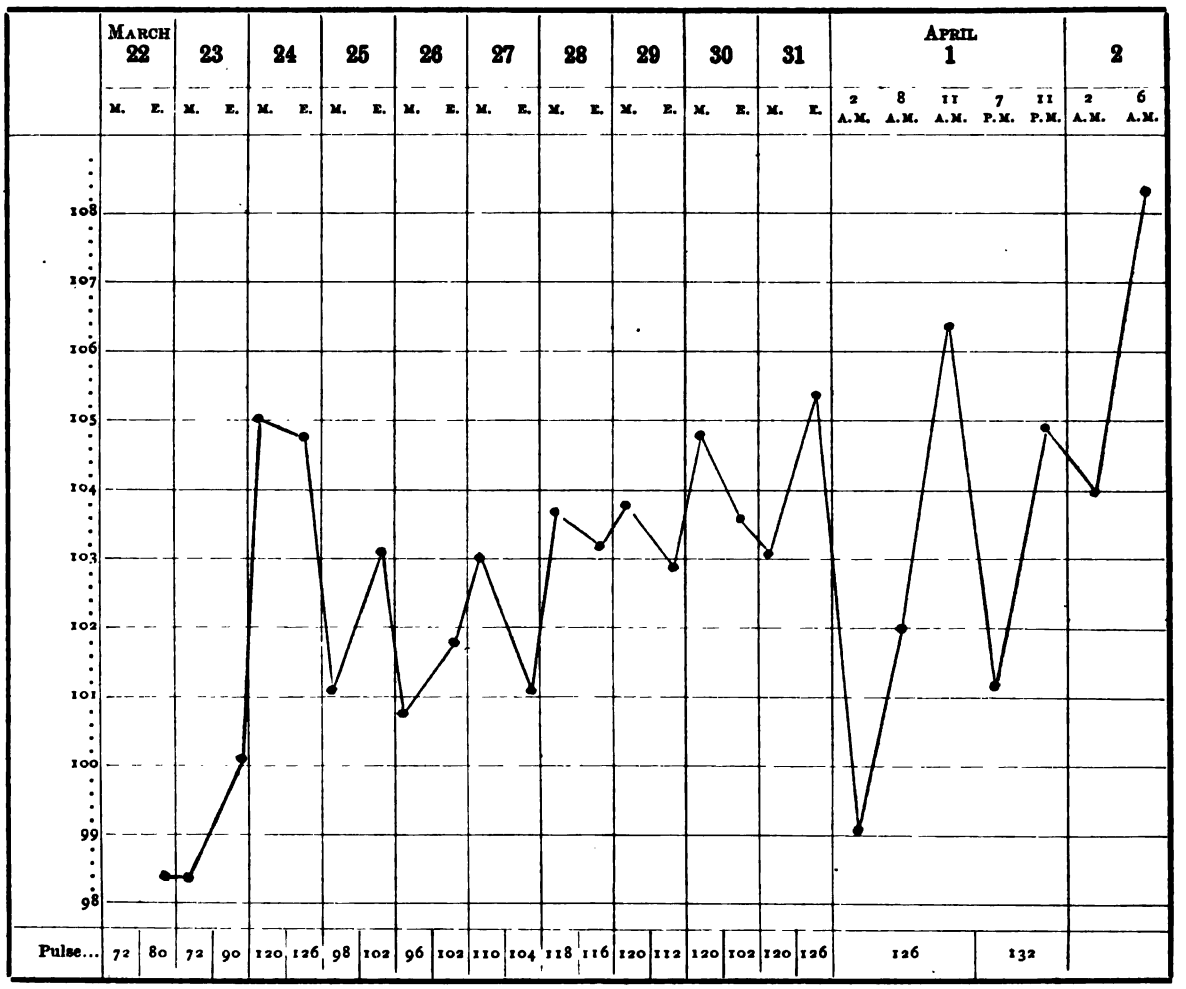
Remarks.—Death evidently resulted from fracture of the skull, accompanied by extravasation of blood, bruising, and inflammation of the brain substance on the right side. The symptoms observed during life were, primarily, those of irritation of the cortex of the cerebrum and its membranes, and congestion of the lungs. On the day preceding death a short period of reaction, followed by symptoms of compression, modified the symptoms of the earlier stage. The restless and violent movements of the limbs pointed to extensive irritation of the motor area. On the day preceding death the left hemiplegia and dilatation of the right pupil localised the lesion more precisely in the right hemisphere.

2. *Death from Cholera.*—At 7 P.M. on 20th July 1888 I saw G. S., aged 34, engineer on board a steamer arrived from Amoy. Patient stated that he had been suffering from looseness of the bowels for about five days, this having commenced during the stay of the steamer in Hongkong. He attributed the cause to some German beer he had drunk there. On his way up the coast he improved somewhat and was able to be on duty; but some hours after leaving Amoy for this port he was seized with violent pains in the bowels and diarrhœa, which persisted until the arrival of the vessel here, some 12 hours afterwards. The exact character of the motions he had not observed, but stated they were watery. When I saw him the skin was cold, eyes sunken, face pinched and voice feeble. Patient, however, expressed himself as feeling much better. Bowels not moved for over an hour. He was removed to bed, but by this time cramps were setting in, and one characteristic rice-water stool was passed. Small doses of iced brandy were administered from time to time and retained, while hypodermic injections of morphia, sinapisms and friction were employed to relieve the pains. Patient rallied somewhat at 8.45, but gradually sank, and died at 10 the same evening.

The deceased had lived in China about two and a half years, and had always been a careful liver. Whether the exciting cause may have been as he surmised it is difficult to say, but free drinking of iced beer is unsafe in hot weather. I have several times seen such an indulgence followed by diarrhœa and cutting abdominal pains. For a few days subsequent to this death two foreign members of the crew suffered from slight diarrhœa, which was undoubtedly of nervous origin, and well illustrated the influence of the mind on the functions of the body.

3. *Death from Puerperal Fever.*—The patient, a primipara, underwent a normal, but very tedious, labour. No retained placenta or membranes. On the evening of the second day the temperature rose to 101°.2, and reached 105° on the following morning. In spite of the high temperature the strength was well maintained until the afternoon of the tenth day, when a series of rigors, followed by corresponding rises of temperature, led up to a fatal termination on the morning of the twelfth day (temperature 108°.4). On the morning of the third day there was considerable abdominal tenderness, which, however, disappeared the same day after free movement of the bowels. Antiseptic injections were used from the outset, and the lochia were normal, but rather scanty. The leading symptoms were headache and discomfort from the high temperature; the patient was otherwise free from pain, and the mind remained clear until the last day.

The source of the septicæmia I could not trace. During her stay in China (a period of 14 months) the patient had not suffered from malarial fever. I append a chart of the course of the disease :—



4. *Death from Heat Apoplexy (doubtful).*—The patient was an engineer, apparently about 40 years of age and of good physique. When I saw him on board ship, on 24th June 1890, he was suffering from alcoholism. He had delusions; was sleepless, restless, but not violent. Alcohol was prohibited, and sedatives administered. On the following day, when the steamer left for Kelung, he had slept and was much more composed. It appears that he gradually improved, and on the morning of the 28th went on duty. About 9 A.M., however, the old delusions returned, and the patient kept aimlessly wandering about the decks until ordered to retire to his room, which he soon left and lay down in the alley-way. He seemed to sleep until 1.20 P.M., when the man on watch observed that the breathing was heavy, and immediately called assistance. Death occurred shortly afterwards. Those present agree in stating that the body was intensely hot and remained so for some time after death; unfortunately, no more exact temperature record was made.

Whether or not the deceased indulged in a fresh debauch on the morning of his death is not known; but on the supposition that high body temperature existed, it is just possible that he had incurred heat apoplexy, an accident to which at this season of the year his condition would have rendered him peculiarly liable.

Work in the native hospital has been carried on as actively as before, and the number of admissions has steadily increased. Distance precludes many from taking advantage of the institution—a drawback which the present railway extension in the island will greatly tend to remove. As it is, many come a distance of five or six days' journey, especially such as are anxious to undergo operation for the removal of tumours.

Owing to the introduction of foreign machinery and appliances, accidents during the past three years have been more numerous. On the railway track, which is frequented as a public pathway, a few fatal accidents have occurred, chiefly in the case of deaf or blind persons who have inadvertently stepped in front of a train. One or two serious accidents in the saw-mills, due to clothing getting entangled in the wheels, served to show those more immediately connected with machinery the necessity of adapting their clothes to the foreign pattern, especially in the narrower cut of the sleeves. When we remember that until four years ago the natives were quite unacquainted with railways and complicated machinery, and consider the callous manner in which the average Chinaman handles dangerous instruments and explosives, the wonder is that accidents are not more frequent—in fact, foreigners who have been employed in European workshops observe that the Chinaman is remarkably fortunate in this respect.

Almost every year, at some part of the border, warfare is carried on between the Government and the aborigines. In the autumn of 1888 the fighting was of an unusually severe nature, and many Chinese were killed and wounded. The savage, as usual, took advantage of the thick cover, avoiding the open, so that hand-to-hand fighting did not take place. Concealed, he waits until his enemy is within easy range, takes careful aim, and after firing quickly crawls a few yards from the spot, so that, if the shot be returned, his whereabouts may not be known. Should the wound inflicted not prove fatal, he despatches his victim with the knife. For fighting purposes the border savages now regard their bows and arrows as obsolete; they are well provided with jingals and old muzzle-loading rifles, chiefly obtained by barter from the border Chinamen. Their gunpowder comes from the same source, and as it is a scarce commodity the savage does not readily waste a shot. On the present occasion the approaches to a village were studded by the savages with sharp-pointed spikes of bamboo carefully covered by the grass, so that not a few of the Chinese soldiers sustained severe penetrating wounds of the feet and legs.

On the 2nd September 22 of the wounded arrived by steamer from Pinam, the seat of war, on the east coast. The injuries comprised:—

Gunshot wound of the thigh	4
" " " arm	2
" " " neck	2
" " " leg	1
" " " hand with injury to bones	2
" " " shoulder with injury to bones	3
" " " head and face with injury to bones	6
" " causing compound fracture of the leg	1
" " of the knee-joint	1

The wounds were eight days old, and as they had been neglected in the interim the fetor was almost unbearable. 13 submitted to the removal of bullets or fragments of bone—an operation rendered, in most cases, rather difficult on account of the small and irregular character

of the shot, the depth of penetration and the pockets caused by the burrowing of pus. The shot varied in weight from 35 grains to about an ounce, was of irregular shape, consisting of fragments of pot metal and hammered pieces of lead, which nevertheless penetrated deeply on account of the close range—usually about 20 yards. One shot, which had entered the neck, was found deep in the tissues beside the sixth dorsal vertebra, while an irregular piece of metal, 1¼ by ¾ inch, and weighing 6 drachms, had carried away the bridge of the nose and embedded itself in the superior maxilla. The patients who underwent operation made good recoveries. Of the others, one died from a compound fracture of the leg, which had not been set or dressed for eight days; another patient died from tetanus the day after arrival, the bullet having perforated the ball of the right thumb and shattered the proximal phalanx of the left.

I append a meteorological table for the 12 months ended 30th September 1890, for which I am indebted to Mr. Harbour Master STEVENS. The rainfall for this period was 73.40 inches, which is a large amount as compared with most other ports, but small when compared with that of Kelung, which for the same period amounted to 144.86 inches, 54.47 inches having fallen between 1st October and 31st December.

METEOROLOGICAL TABLE, October 1889 to September 1890.

Month.	Wind.					Weather.			Barometer.		Thermometer.			
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Fog.	No. of Days Rain.	Rainfall.	Highest Reading.	Lowest Reading.	Highest Reading.	Lowest Reading.	Solar Rad. Max.	Ground Rad. Min.
1889.								*Inches.*	*Inches.*	*Inches.*	°	°	°	°
October	8	2	...	...	21	...	11	4.42	30.26	29.76	95.0	62	160	61
November	21	2	...	...	7	...	20	9.34	30.48	29.97	80.0	56	145	54
December	19	2	...	...	10	1	12	2.52	30.45	30.03	76.0	47	145	46
1890.														
January	19	2	...	2	8	...	21	10.76	30.43	29.95	73.0	43	145	41
February	13	6	...	3	6	5	7	1.98	31.39	29.80	77.0	49	144	47
March	23	...	...	4	4	8	19	14.47	30.49	29.95	80.0	45	154	44
April	8	4	1	6	11	3	6	2.51	30.23	29.87	87.0	48	155	45
May	14	4	2	2	9	...	13	7.07	30.10	29.83	87.0	63	157	60
June	1	6	6	1	16	...	8	4.21	30.04	29.85	92.5	69	166	69
July	...	10	11	1	9	...	7	7.41	30.05	28.65	94.0	72	162	72
August	...	5	8	1	17	...	7	3.77	30.06	29.75	95.0	72	163	75
September	24	1	...	...	5	...	13	4.94	30.05	29.73	92.0	66	165	64

Dr. W. MORRISON'S REPORT ON THE HEALTH OF NEWCHWANG

For the Year ended 30th September 1890.

Meteorological Table, October 1889 to September 1890.

Month.	Aneroid Barometer.		No. of Days on which the Temperature fell below						No. of Days on which the Temperature rose above						No. of Days on which Rain fell.	Total Amount of Rainfall.	No. of Days on which Snow fell.	No. of Days on which there were Dust Storms.	No. of Days on which High Winds blew.
	Highest.	Lowest.	°F. -15	°F. -10	°F. 0	°F. 10	°F. 20	°F. 32	°F. 50	°F. 60	°F. 70	°F. 80	°F. 85	°F. 90					
1889.	*Inches.*	*Inches.*														*Inches.*			
October*	...	...	...	...	...	...	1	4	7	19	...	...	...	...	2	2.00	...	...	1
November*	...	...	...	...	...	...	4	24	2	...	...	...	...	...	2	0.46	1	...	3
December	30.60	30.00	...	...	...	3	22	6	...	...	...	...	...	...	...	...	4	...	6
1890.																			
January	30.70	30.00	...	...	9	14	6	2	...	...	...	...	...	...	...	...	2	1	3
February	30.78	29.80	...	...	...	7	11	10	...	...	...	...	...	...	...	...	2	1	7
March	30.50	29.97	...	...	...	1	4	20	6	...	...	...	...	...	...	...	...	3	10
April	30.60	29.55	...	...	...	...	...	2	24	4	...	...	...	...	2	0.40	1	1	9
May	30.30	29.50	...	...	...	...	...	...	3	12	14	2	...	...	1	0.50	...	...	4
June	29.90	29.35	...	...	...	...	...	...	...	1	19	6	4	...	3	1.50	...	3	5
July	30.00	29.47	...	...	...	...	...	...	...	5	14	11	1	...	12	2.97	...	...	2
August	29.85	29.56	...	...	...	...	...	...	...	2	14	10	5	...	7	3.91	...	...	3
September	30.20	29.70	...	...	...	...	...	...	...	15	15	...	...	...	3	0.87	...	1	4

* Barometer out of order.

The health of this community has been in a satisfactory condition during the year. During the earlier half of the year we had a number of cases of influenza, but neither its extent nor its severity would entitle the disease to be ranked as epidemic.

At the beginning of the open season we had a period of drought, limited to the lower reaches of the Liao. In the central and northern parts of the country more rain fell. The

crops were abundant and the people exceptionally prosperous. The dry period generally lasts from about the middle of April to the middle of June. Drought and dust are not the only discomforts. During the same period we have daily winds from the south-west of a blustering and unpleasant nature. This wind is purely local, being limited to the lower portion of the plain through which the Liao flows, though on other parts of the coast, where the physical conditions are similar, a like phenomenon may be observed. Each day this wind begins at sunrise and dies away with the close of day. The evenings, as a rule, are quite still. The influence of this meteorological condition on health is obvious: colds and sore throat are prevalent during the earlier part of the period. Exercise in the open air is circumscribed, though so necessary in a place where life has such a tendency to stagnate. The class I have observed to suffer most are convalescents recovering from operations or from severe sickness. Special precautions have to be taken to prevent their too early exposure.

Among the native population there has been much less poverty and sickness, no doubt owing to the commercial prosperity of the town.

There have been five births during the year—two males and three females,—all healthy and normal. Four deaths occurred from the following causes:—

Chronic bronchitis.	Influenza.
Acute alcoholism.	Typhus fever.

DR. HENRY LAYNG'S REPORT ON THE HEALTH OF SWATOW

For the Half-year ended 30th September 1890.

FOR the meteorological table I am indebted to the kindness of Captain C. H. PALMER, Harbour Master.

METEOROLOGICAL TABLE, April to September 1890.

Month.	Wind.					Barometer.				Thermometer.						Weather.		
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Calm.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Averages. Wet Bulb.	Averages. Dry Bulb.	No. of Days Rain.	Rainfall.	No. of Days Fog.
	D. h.	D. h.	D. h.	D. h.	D. h.	Inches.	Inches.	Inches.	Inches.	°	°	°	°	°	°	D. h.	Inch.	D. h.
April	4 18	14 12	2 12	1 6	7 0	30.204	29.758	30.150	29.860	85.0	63.0	81.0	62.0	65.0	72.0	0 23	2.60	7 0
May	7 0	12 18	2 18	2 12	6 0	30.150	29.730	30.120	29.780	85.0	68.0	81.0	70.0	77.9	78.3	3 1	4.59	3 0
June	2 12	12 18	9 18	1 0	4 0	30.030	29.800	30.050	29.840	88.0	75.0	87.0	74.0	77.2	80.0	3 12	10.30	...
July	1 6	3 18	16 18	3 6	6 0	30.100	29.580	30.050	29.660	90.0	75.0	86.0	75.0	78.4	82.1	3 10	12.54	...
August	2 15	4 12	13 0	6 0	4 18	30.070	29.750	30.030	29.780	91.0	80.0	85.0	78.0	78.9	83.5	0 9	1.51	...
September	6 6	17 12	2 6	1 12	2 12	30.100	29.780	30.080	29.820	87.0	71.5	82.5	70.0	75.1	79.4	2 4	3.49	...

The summer has been exceptionally cool and dry; westerly winds were more frequent than usual. There has been a marked absence of heavy gales.

Considerable progress has been made in reclaiming foreshore. No cases of sickness have occurred that could be traced to these operations.

In April some few additional cases of epidemic influenza occurred among the foreign residents, and all through the summer, now and again, a case has been seen on board one of the steamers.

Malarial fevers have been more frequent. Several residents suffered from severe attacks of remittent fever. The natives living in the villages on the south side of the river appear to have been the greatest sufferers, many deaths occurring. Owing to the difficulty of keeping

Chinese patients suffering from fever closely under observation, one's means of obtaining reliable evidence was small; but the general story was one of daily fever, more severe at night, with an absence of all history of a cold stage.

In the early months of the summer dysentery was very prevalent among the natives, three cases occurring among the foreign residents.

One case of purpura hæmorrhagica in a native came under treatment, and one of purpura simplex, associated with severe acute dysentery, in a European child 8 years old.

The health of the foreign children, with the single exception quoted above, has been, as usual, remarkably good.

No cases of cholera have arisen in the port. One officer of a steamer arrived here from Shanghai with cholera. He was admitted into the Seamen's Hospital on 28th August, and discharged on 5th September.

Among the minor complaints, tonsillitis and febricula have occurred with the greatest frequency. The number of cases of diarrhœa and colic has been below the average.

A case of belladonna poisoning, caused by the local application of glycerine of belladonna and belladonna and iodine ointment to an inflamed testicle, was seen on board a coasting steamer. The patient had been using the application for about six days. He complained of having passed a wretched night; that his mouth and tongue were as dry as a piece of cardboard; and that he could scarcely see. The condition of the mouth was aptly described by the patient himself. Vomiting had taken place once. Both pupils were widely dilated, and there was great restlessness and nervousness, but no rash was anywhere visible. The application of belladonna was at once discontinued, and all symptoms completely disappeared in 48 hours.

There have been four births and no death.

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CHINA.

IMPERIAL MARITIME CUSTOMS.

II.—SPECIAL SERIES: No. 2.

MEDICAL REPORTS,

FOR THE HALF-YEAR ENDED 31ST MARCH 1891.

41st Issue.

PUBLISHED BY ORDER OF

The Inspector General of Customs.

Oct. 17, 1894

SHANGHAI:
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AND SOLD BY
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LONDON: P. S. KING & SON, CANADA BUILDING, KING STREET, WESTMINSTER, S.W.
1894.

[*Price* $1.]

CHINA.

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46271

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[*Price* $1.]

INSPECTOR GENERAL'S CIRCULAR No. 19 OF 1870.

INSPECTORATE GENERAL OF CUSTOMS,

PEKING, 31st *December* 1870.

SIR,

1.—IT has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to { Season. / Alteration in local conditions—such as drainage, etc. / Alteration in climatic conditions. }

e.—Peculiar diseases; especially leprosy.

f.—Epidemics { Absence or presence. / Causes. / Course and treatment. / Fatality. }

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking. I have committed to Dr. ALEX. JAMIESON, of Shanghai, the charge of arranging the Reports for publication, so that they may be made available in a convenient form.

3.—Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr. ....., and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 30th September—that is, for the Winter and Summer seasons.

4.— * * * * *

I am, etc.,

(Signed) ROBERT HART,
I. G.

THE COMMISSIONERS OF CUSTOMS,—*Newchwang*, *Tientsin*, *Chefoo*, *Hankow*, *Kiukiang*, *Chinkiang*, *Shanghai*, *Ningpo*, *Foochow*, *Tamsui*, *Tainan*, *Amoy*, *Swatow*, and *Canton*.

SHANGHAI, *1st June* 1894.

SIR,

IN accordance with the directions of your Despatch No. 6 *A* (Returns Series) of the 24th June 1871, I now forward to the Statistical Department of the Inspectorate General of Customs, the following documents:—

Report on the Health of Hankow for the eighteen months ended 31st December 1890, pp. 1–8.

Report on the Health of Tainan, p. 33;

Report on the Health of Shanghai, pp. 36–46; each of these referring to the two years ended 31st March 1891.

Report on the Health of Canton, pp. 11–13;

Report on the Health of Amoy, p. 19;

Report on the Health of Pakhoi, pp. 31, 32; each of these referring to the year ended 31st March 1891.

Report on the Health of Chinkiang, pp. 9, 10;

Report on the Health of Ningpo, p. 14;

Rapport sanitaire du district douanier de Lappa, pp. 15–18;

Report on the Health of Tientsin, p. 20;

Report on the Health of Kiukiang, pp. 21–28;

Report on the Health of Ichang, pp. 29, 30;

Report on the Health of Chefoo, pp. 34, 35; each of these referring to the half-year ended 31st March 1891.

I have the honour to be,

SIR,

Your obedient Servant,

R. ALEX. JAMIESON.

THE INSPECTOR GENERAL OF CUSTOMS,

PEKING.

The Contributors to this Volume are:—

C. BEGG, M.B., C.M.Ed. ..... Hankow.

J. A. LYNCH, M.D., M.CH. ..... Chinkiang.

J. F. WALES, B.A., M.D., CH.M. ..... Canton.

C. C. DE BURGH DALY, M.B., B.CH. ..... Ningpo.

G. S. ..... Lappa.

B. STEWART RINGER, M.D., M.R.C.S., L.S.A. ..... Amoy.

A. IRWIN, F.R.C.S.I. ..... Tientsin.

GEORGE R. UNDERWOOD, M.B., C.M., L.R.C.S.Ed. ..... Kiukiang.

E. A. ALDRIDGE, L.M.&L.K.&Q.C.P.I., M.R.C.S. ..... Ichang.

A. SHARP DEANE, L.K.&Q.C.P., L.R.C.S.I. ..... Pakhoi.

W. WYKEHAM MYERS, M.B., CH.M. ..... Tainan.

W. A. HENDERSON, L.R.C.S.Ed., L.R.C.P.Ed. ..... Chefoo.

R. ALEX. JAMIESON, M.A., M.D., M.R.C.P. ..... Shanghai.

Dr. C. BEGG'S REPORT ON THE HEALTH OF HANKOW

For the Eighteen Months ended 31st December 1890.

Meteorological Table, July 1889 to December 1890.

Month.	Wind.					Barometer.		Thermometer.		Solar Rad.		Rain.	
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
1889.						*Inches.*	*Inches.*	°	°	°	°		*Inches.*
July	5	5	9	1	11	29.734	29.446	102.0	68.0	151.0	97.5	10	6.67
August	11	8	...	...	12	29.896	29.514	99.5	70.0	147.0	133.0	8	3.20
September	12	3	...	5	10	30.534	29.600	96.0	62.0	148.0	73.0	18	12.39
October	13	4	...	6	8	30.286	29.760	84.0	48.0	134.0	65.0	18	9.04
November	21	4	...	3	2	30.522	29.848	67.0	37.0	120.0	55.0	13	3.21
December	15	8	1	3	4	30.570	29.938	59.0	30.0	108.0	60.0	3	0.07
1890.													
January	11	3	1	4	12	30.560	29.950	*	*	*	*	8	1.82
February	11	8	2	3	4	30.520	29.570	*	*	*	*	9	1.61
March	16	3	...	2	10	30.500	29.810	*	*	*	*	7	4.39
April	8	12	2	3	5	30.334	29.416	87.0	38.0	144.0	78.0	14	8.63
May	7	10	2	3	9	30.100	29.570	90.0	50.0	145.0	105.0	11	3.95
June	4	11	4	1	10	29.848	29.434	99.5	67.0	148.0	76.0	11	10.52
July	7	12	4	...	8	29.810	29.430	98.0	76.5	150.0	126.0	11	4.56
August	5	15	...	2	9	29.790	29.534	97.0	64.0	160.0	135.0	8	3.64
September	14	6	...	4	6	30.236	29.550	92.0	65.0	147.0	131.0	...	...
October	15	...	...	8	8	30.253	29.836	86.0	52.0	139.0	90.0	1	0.20
November	17	1	1	1	10	30.382	29.810	78.0	35.0	128.0	64.0	6	1.35
December	16	5	...	4	6	30.532	29.664	64.0	26.0	107.0	51.0	12	1.99

* No instruments.

For the above meteorological table I am indebted to Mr. Tidesurveyor R. Trannack.

During my absence for 15 months of the period under consideration the whole of the medical duties of the port fell to Dr. Thomson, who submits the following Report:—

The summer of 1889 was a rather trying one. Heavy rains in June were followed by intense heat in July. During the first three days of July the readings of the maximum and minimum thermometers rose rapidly, and from this time onward we had a succession of very

hot days and nights. For the period extending from the 4th to the 12th July the mean temperature, as calculated from the average of the maximum and minimum readings for each 24 hours, was 92°.2 F. The maximum temperature was reached on the 9th, and read 102° F. in the shade.

Between the mornings of the 9th and 11th four deaths occurred in the Settlement. Three of the victims were from among the residents—one, an adult, whose death could in no way be attributed to climatic influences; two were infants, whose deaths were more or less directly traceable to conditions of climate and season.

The fourth was an engineer on board one of the river steamers—a well-built, powerful man, of about 25 years of age,—and in his case the cause of death was heat apoplexy or sunstroke. When first seen by me he was stretched on his back on the upper deck, with limbs flaccid, mouth open, breathing stertorously, skin burning, eyes fixed, pupils contracted and conjunctival reflex gone, pulse bounding and frequent. Temperature in axilla 108°.5 F. On questioning his shipmates I was told that he had been in China for about three weeks only, having come direct from Glasgow to Shanghai. This was his first trip up river. As a new-comer, he had evidently been rather careless of himself: while on deck, with but a single awning between him and the blazing midday sun, and while on shore, he wore an ordinary sailor cap (no sun hat, no preserves for the eyes). He seems, too, to have suffered from constipation for some time previous. On the afternoon of the day he was seized, after working hard in the engine-room, he came on deck, exhausted and perspiring, and freely exposed himself to the little breeze there was. After resting awhile he returned to the engine-room, to finish the work he had been engaged upon, and then came back and had a cold bath on deck. Feeling somewhat unwell after this, he went on shore to see the doctor. Not finding the doctor at home, he left, intending to call again either that evening or next day. On reaching the boat, however, he dropped, unconscious, and when seen by me, shortly afterwards, was in the condition described above. In two and a half hours the temperature in the axilla had fallen to 106° F., but there was no sign of returning consciousness. Approaching midnight, convulsions set in; the first seizure occurred while I was with another patient. It was described as being very violent and general. His tongue was badly bitten. The second seizure occurred while I was present. It affected first the face and muscles of mastication, the right arm, and afterwards, and to a less degree, the muscles of the back, giving rise to slight opisthotonus. The pulse had now become much weaker, was irregular and intermittent; the countenance was livid; eyes fixed in the same glassy stare, though now the corneæ were dimmer. As he sank, gradually, the respirations became less noisy, convulsions less frequent and feeble. He died about 2.30 A.M., between seven and eight hours after he dropped on deck, never having shown the slightest sign of consciousness from the time he fell.

At the beginning of the outburst of heat above referred to the minds of some of the members of the community were further disturbed by a threatened rising among the Chinese. The exposure incurred during a sudden flight and hasty return was no doubt a potent factor in the immediate cause of death in the case of one of the infants above mentioned.

In July, August and September of 1889, besides cases of severe diarrhœa, there were several cases of acute dysentery among the residents. All were successfully treated and cut short in the acute stage, with the exception of one case (male adult), which became chronic, and continued more or less troublesome until early in the spring of 1890. Since then he has been entirely free, having gone through the summer of 1890 without the suspicion of a return. Several of the men on board H.B.M.S. *Merlin*, which was in this port part of July and August, suffered from dysentery and dysenteric diarrhœa. Two had to be left behind in hospital. Both had been ailing for some time, but made a fairly speedy recovery.

Ague and remittent fevers seem to be of extremely rare occurrence among the residents; while among the patients attending the hospital for Chinese, ague (tertian, quartan, quotidian, in order of frequency) seems common enough. Among the European residents I remember having seen only one typical case of tertian ague during the past two summers, and it very speedily yielded to treatment.

Equally common among foreign residents and natives—or more marked in the case of foreign residents—is a sthenic type of fever, in which the temperature, as taken in the axilla, runs up to 103° or 104°, in many cases to 105°, and in rare cases to 106° and 107° F., in the course of a few hours. As must needs be from the suddenness of the rise in temperature, there is usually, to begin with, a feeling of chilliness. At the height of the disease the face is generally flushed, the pulse soft and frequent, the skin invariably hot and dry ("burning"), and headache, usually intense, is complained of. In such cases the bowels have generally been constipated or irregular in action for some days before the onset of the symptoms mentioned. Without entering into particulars, it may be stated, in a general way, that such fevers are most probably due to the absorption of some very poisonous ptomaines by the bowel. A dose of castor oil, or some such purgative sufficient to thoroughly clear the bowel, puts a stop to the further production of these ptomaines; and as the quantity already absorbed is being eliminated from the system, the symptoms gradually subside. In many cases this may be all the treatment required; but when the temperature is very high, the skin particularly burning and headache most intense, antifebrin has a wonderful effect. As a rule, for an adult, 5 grains of antifebrin dissolved in a little brandy and diluted with water, with or without 5 to 10 minims of tincture of digitalis, according to the circumstances of the case, has been followed by cessation of headache, profuse perspiration and quiet sleep of some hours' duration, from which the patient awakes refreshed and well. In the majority of cases, where the bowels are attended to, the single dose suffices.

The autumn of 1889 was remarkable for the continued high state of the river. So late as October the water rose above the level of the bund and flooded the whole Concession. For weeks before this the underground drains were practically sealed, and the low-lying lots, covered with stagnant water and decaying vegetable and animal matters, were more or less converted into so many cesspools. So far as these, then, were concerned the further rise in October was to be welcomed. With all its inconveniences and disadvantages in other respects, and although the current sets from the Chinese city adjoining, the inundation was favourable to the health of the community. So offensive and so evidently injurious were these low-lying lots throughout the season that in November 1889 an address, signed by all the residents under whose notice it came, was forwarded to the Secretary of the Municipal Council, urging that the matter should be represented to the owners of these lots. Copies of this address were sent by the Council to each of the owners. Some, I am glad to say, immediately responded by having their lots raised to the ordinary level, while others have not yet seen their way to do the same.

The winter of 1889–90 was very mild. No ice was collected, and we had to depend on a supply from Tientsin for the following summer. In future the Hankow Ice Factory, just started, will, it is to be hoped, make us independent of fickle winter's supply.

During the winter months no special epidemic occurred; but early in the spring there raged in the Chinese city an unusually severe epidemic of small-pox. Within the Settlement only two cases came under my notice.

The patient in the one case was a Chinaman employed in one of the hongs. He had never been vaccinated, and though his case was a pretty severe one—mixed discrete and confluent,—he showed no untoward symptom from beginning to end, and escaped without any noticeable pitting.

The other patient was a foreigner, and lived in a hong with many occupants. He was at once removed to hospital, and there isolated. His case is remarkable in that it appears to have been a second attack. He declared that he had had small-pox when a child, and showed at least one marked pit by the side of the nose. This time, at all events, he was covered from head to foot with typical small-pox rash, though, apart from the rash, his symptoms were of the mildest form. With the exception of a couple of days, when the rash was developing, he hardly felt sick, and, but for his appearance and the sake of others, would no doubt have considered confinement, even to his room, a hardship. He, too, escaped without any further permanent marking.

In the spring of 1890 there occurred one case of enteric fever.

The patient was a young adult male. For the first two or three days the temperature was anything but typical of enteric fever; it began high, and as small-pox was prevalent at the time, and one case had just appeared in the Settlement, I was inclined at first to believe that this might turn out a mild case of small-pox. It was not until the fourth day that one could have been sure of the true nature of the illness. The temperature tracing, too, seemed to make a new start on the third day of the illness, and after that the disease ran through the typical course of moderately severe enteric fever.

As comparative rarities I may mention a case of measles and a case of whooping-cough in adults that came under my notice last spring. The patient in the former case was an officer on one of the river boats. On the trip before this a child with measles had travelled on the steamer for a short distance. He said he never had had measles as a child, and this was a first attack. The patient with whooping-cough had it for the first time too, and caught infection while travelling with children suffering from the disease.

Influenza first made its appearance here in April, shortly after the first cases were reported from Shanghai. It certainly seemed to have been carried in the line of traffic from Shanghai; but then the great world-wide epidemic seems to have spread in a westerly direction, with less dependence on routes of trade and travel for its direction than would appear from this. In cases here the temperature averaged nearly a degree higher than in cases in England, judging from the reports that appeared in the medical journals. I cannot say that I saw any after consequences.

From July 1889 until May 1890 we had not to record a single death; but in May 1890 one of our most venerable residents passed away.

He died of liver abscess, complicated with acute croupous pneumonia. The abscess or abscesses burst into the hepatic flexure of the colon, and on three separate occasions large quantities of blood clot were passed by the bowel.

The summer of 1890 was very mild, but not particularly healthy. There were, as usual, cases of dysentery, summer diarrhœa, and the sthenic type of fever above referred to; but besides these, many who hardly ever felt sick before complained of a general feeling of malaise, which, however, led to no further development. During the hot months cholera was, as usual, reported among the natives in the city; but there was no epidemic of true Asiatic cholera, such as prevailed in Nagasaki and Shanghai. About the end of July a case of true Asiatic cholera on board one of the river boats was reported from Kiukiang. The boat was allowed to

proceed from Kiukiang, but was detained here below the harbour limit until inspected by the Medical Officer of the port. After inspection I was able to report that none of the passengers or crew showed any sign of being infected; and time bore me out in this, as no other case subsequently appeared on board. The ship, so far as appeared necessary, was disinfected, and proceeded on her way without loss of time. Early one morning in July I was called to a case that showed all the symptoms of a mild attack of cholera.

The patient—an adult male of about 30 years of age—was seized during the night with sudden diarrhœa, and in the course of a few hours was quite prostrate, with hollow eyes, vox choleraica, cramps in lower extremities, and the stools, which were very frequent and free, were of the peculiar rice-water character. The attack soon yielded to treatment, and next day the patient was in his office attending to business.

In September one infant of 11 months died of acute dysentery. At the Kiukiang hills, on a former occasion, on slighter illness, he had shown a marked tendency to sudden collapse, and now, under the severer strain, he soon sank, the duration of the illness being within 24 hours. In marked contrast to this was the case of another infant that fought against entero-colitis, with teething, throughout the long summer months, and only in September, when in a very exhausted and worn condition, succumbed at last in Kiukiang, on his way to the hills, where he was being sent as a last resource.

For some weeks during the hot season the underground drains were again practically blocked from the high state of the river; and though some of the low-lying lots had been raised since the season of 1889, those that remained, and still remain, low were offensive enough.

During the whole period under consideration there were in all seven births (five males and two females) and six deaths (two adult males and four children from 10 to 15 months of age—three males and one female) among the residents proper; or, taking the year 1890 by itself, there were six births and three deaths (one adult and two children).

On my return to Hankow, after 15 months' absence in England, I was in time to observe what appeared to be a second wave of "la grippe." I had seen something of this curious epidemic at home, and hardly feel justified in classing what I now saw among my patients as the same disease. I have found myself unable to distinguish it from ordinary influenza as we have been accustomed to see it, although observers all notice an elevation of temperature and a severity of after effects which lead them to make a distinction. To my mind it rather appears as if these were due to a greater severity, the result of its being able to attack so many at once; and I feel inclined to attribute the chance it thus obtained of distinguishing itself solely to the state of the atmosphere, which was most favourable to its development. This was markedly so at the period I speak of. During October 1890 the sun was warm and bright, and it was pleasant out of doors; but the houses were chilly, and as yet few people had started fires. One had to dress more warmly for the house than for out of doors; and it seemed to me that as soon as that fact was taken notice of,

the epidemic quickly ceased. Treatment I found, to be successful, had to be directed to good nursing and attending to the usual rules of health. A sharp purge, expectorants, with poultices and a warm, dry atmosphere, speedily ended the cases; and just in proportion to the amount of care taken at the time, so was the after effect. It seemed unnecessary to try and control the fever or to look for any special drug, and very little trouble was given by patients as soon as they were placed in a normal condition of function. What might be termed a third wave passed over the Settlement in February 1891. This time it was confined to a row of houses occupied by some Chinese, principally girls. Some of the cases were rather severe, and attacked the lungs, always a weak spot with Chinese; but with care all recovered perfectly.

SPRUE.

I wish to add to my former communication the following case I treated at home, and the report of which I read, together with my former cases, in a paper before the Medico-Chirurgical Society of Edinburgh, 2nd April 1890. The paper appeared in the *Edinburgh Medical Journal* for September 1890:—

I have treated, however, since my return home one patient whom I met in a hotel in London, whose case is a specially interesting one, for, among other things, it had been diagnosed as a true example of the disease in question by good men both in India and at home. It is also most interesting from the intelligent account given by the patient of its origin, and as being just the case where, had an irritable, defenceless condition of the mucous membrane from mouth to anus existed for 19 years, one would not have been surprised had it ended in atrophy, and the patient been incurable.

Patient states:—

I first contracted what we call in India hill diarrhœa in 1871, marching from Nini Tal to Almora. It was a three days' march, and, although in the Himalaya range, was very hot. I drank copiously from the small springs on the sides of the hill. On reaching Almora diarrhœa set in violently, and continued for a long time after I went to the plains. It was partially stopped by a medicine, but not, however, cured; and I was never, I may say, certain of myself, and, as far as I can recollect, never had a firm motion. In 1878 I had a very bad attack in Paris, and was again helped by treatment. My last bad attack was at Darjeeling, in 1883, and up to date I have never been free from it. In 1883 I weighed 17 stone 12 pounds, and went gradually down to under 12 stone. I am now 12 stone 3 pounds, with clothes and a light overcoat, which is scarcely enough for a man of 6 feet 4 inches.

This patient presented the appearance of chronic ill health: pale, anæmic; pained, anxious face; and being of commanding height, his thinness was most pronounced. He complained of constant pain with diarrhœa, or rather a constant uneasy feeling in the bowel and irregular motions, ever and again lighting up into a sharp attack of diarrhœa, leaving him prostrate.

In October 1889 I put him through a course of six powders of santonine, but he could only obtain the *white;* and he wrote me on the 19th of that month as follows:—

I certainly think I have benefited by the course, but possibly my complaint is of such long standing that only six powders may not be sufficient.

He was advised to obtain the yellow santonine and repeat the course; and on the 16th March 1890 he writes me:—

DEAR DR. BEGG,

I AM afraid from my long silence you will think I have forgotten you, but that is not the case, as I waited to give the treatment you recommended a good long test before communicating the result. I went through a second course of the santonine (the yellow), and I am delighted to be able to tell you that I have been, I may say, quite free from that complaint ever since, and have felt as I have not done for years.

Confirming that letter, he writes a week later:—

I only wish I could help you to make it well known, as after years of suffering and consulting some of the best physicians in London, who gave me no permanent relief, your treatment has, as far as I can now speak, completely cured me. In addition to the relief and freedom from pain, I am quite a different man, and able to go through a hard day's work without feeling fatigue, which I was not able or fit to do before. I for one can say that the old remedies of chalk mixture, acids, milk diet, etc., are of no use for sprue, or what I call hill diarrhœa, for I have tried them all, and many other medicines that have from time to time been given me.

I afterwards saw this patient in London, and confirmed his statements as to his restored condition of perfect health.

Since my return to China I have seen Dr. THIN's article on Sprue, published in the *British Medical Journal*, and have written a communication to the same journal on the subject. Dr. THIN's paper was a description of a postmortem on a patient of his who died on account of, or at any rate with, the disease. A splendid series of microscopic sections of the mucous membrane from mouth to anus was prepared by Dr. F. J. WETHERED, a pathologist of repute attached to a London hospital. By his kindness I was afforded an opportunity of examining the series, and had the benefit of Dr. WETHERED's personal explanation of each slide. At the close of our investigations Dr. WETHERED expressed himself as positive that the theory of mine would alone explain the appearances seen, and since my return to China has confirmed that opinion. Writing under date 21st January 1891, he states:—

. . . . With regard to the pathology of the disease, I am fully of your opinion. . . . . I have examined several stools microscopically; micro-organisms are of course present in large numbers. *The peculiar white coating that sometimes makes its appearance consists almost entirely of bacilli.*

At the postmortem it was found that this peculiar white coating lined the tube, especially at the part of the bowel where absorption ought to take place, and, to speak generally, that where the coating was present the underlying mucous membrane had undergone extensive change; at all other parts it was healthy. Even Dr. THIN was forced to admit that the appearances went to prove that—

The thick coating of mucoid-like substance that covered the free surface of the bowel must have prevented the contact of the contents with the mucosa, such as it was. The result of such a condition must interfere directly with assimilation and nutrition, and these are the functions which are profoundly interfered with in this disease.

Nothing has been discovered in this or in any other case to account for the peculiar pathological changes described, but their wide extent suggests some morbid agent acting from the free surface. . . . .

Dr. WETHERED now tells us that the peculiar white coating consists almost entirely of bacilli; and I think this statement, taken with the conclusions forced on Dr. THIN, justify me in the hope of soon finding my theory of the cause of this disease established. However that may be, I am still as strong a believer as ever in the power of *yellow* santonine in curing it, given in the way I described. I consider the colour of the drug and the method of its administration most important. It may be unnecessary to state that any specimen of white santonine can be turned into yellow by exposure to strong sunlight for an hour or two. My observation of the difference in clinical value of the two drugs (if they are really distinct) was confirmed by many of the men I met at home who had used santonine for cases of worms, and had been

struck with the fact that it did not seem as powerful as the old yellow they had been accustomed to in former days.

From several quarters I have had most gratifying confirmation of the efficacy of my treatment. Where I have been able to criticise failures I have found that little stress had been laid on the two points I hold to be essential—*i.e.*, colour of drug and method of administration.

Since my return there have been, up to date, three deaths to record, for none of which can the climate of the port or its sanitary condition be blamed. The first was a long-standing case of aortic aneurism; the second patient was brought in from the country with acute croupous pneumonia affecting both lungs; and the third was a case of chronic bronchitis in a patient aged 71.

I can, however, hardly congratulate the residents on any improvement in the sanitary condition of the port, except in so far as filling up of several low-lying lots is concerned. The drainage still continues in a most unsatisfactory condition, and under the present system must of necessity be so. The residents have adopted several of the minor suggestions I made to them when asked to report on their drainage system; but their efforts seem to have been principally directed to protecting the nose from being offended and in trying the impossible task of working efficiently the present system. The water supply continues to be from the same source as before, which cannot be too strongly condemned.

Dr. J. A. LYNCH'S REPORT ON THE HEALTH OF CHINKIANG

For the Half-year ended 31st March 1891.

Meteorological Table, October 1890 to March 1891.

Month.	Wind.						Barometer.		Thermometer.		Rain.	
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Calm.	Highest.	Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
1890.							*Inches.*	*Inches.*	°	°		*Inches.*
October	17	2	...	7	5	...	30.62	30.04	78	47	...	...
November	8	5	...	4	5	8	*	*	73	36	6	1.81
December	7	2	...	6	10	6	*	*	67	21	7	1.06
1891.												
January	9	5	...	8	5	4	*	*	57	22	8	0.94
February	15	3	...	6	3	1	30.76	29.89	57	23	6	2.01
March	6	8	2	3	8	4	30.45	29.68	87	32	8	1.36

* No record.

The winter of 1890–91 was mild and pleasant. The health of the foreign community continued highly satisfactory up to the early days of February, when influenza, which had been smouldering among the native population for a long time past, broke out in our midst. The epidemic was of a much more virulent type than that of last year. Great prostration, calling for the free use of stimulants, was the rule rather than the exception. 13 cases in all were treated. Four occurred in children: these were characterised by acute onset, with high fever and long-continued vomiting; chest symptoms were slight; and the disease ran a rapid and favourable course. In adults the prominent symptoms were cough, headache, and neuralgic pains; the patients became excessively feeble, and convalescence was slow. In one child the disease was followed by purulent tympanitis of both ears, and in two adults by obstinate diarrhœa.

Small-pox is usually prevalent among the Chinese during the spring months. So far as I can learn, the number of cases this season has been singularly small as compared with former years, and no foreigner has been attacked.

A curious sequela of small-pox came under my notice in April 1890, but was not alluded to in my Report.

A lady who had contracted the disease in Yang-chou came to me, some two months after recovery, with a very singular condition of the face. Desquamation had been perfectly normal except on the middle of the forehead, the nose and a portion of each cheek. In these situations an enormous overgrowth of epidermis lay heaped up in pale brown, horny masses. No amount of washing and scrubbing was of any avail. The patient when I saw her was fretful and despondent, not venturing out of doors on account of her disfigurement. A few applications of salicylic collodion removed the unsightly growth and restored her peace of mind.

In March a case of rötheln was met with—the first I have seen in China. The patient, a lady missionary, had just come in from Kao-yu, beyond Yang-chou. The course of the illness was in no respect different from that observed in Europe.

Dr. J. F. WALES'S REPORT ON THE HEALTH OF CANTON

For the Year ended 31st March 1891.

During the past year there were three deaths among the foreign residents. The diseases ending fatally were dysentery, Bright's disease and purpura.

Numerous and severe cases of dysentery and malarial fevers occurred in the autumn and winter, and influenza was epidemic in and around Canton in January and part of February.

In a house on Honam tenanted by some of the members of the Imperial Maritime Customs Out-door Staff four persons were attacked, almost simultaneously, with acute dysentery. Here the disease was traceable to the use of water that had been obtained from a well on the premises. The well was closed, and the outbreak ceased.

Scarcity of good water, caused by the lengthened absence of rain, had much to do with the general unhealthiness which prevailed. The exposure to the air of the beds of wells, ponds, small streams, etc., that had become dried up was another factor.

Experience shows that there are certain cases of malarial fevers which quinine and other anti-periodic drugs fail to cure. These are only benefited by removal of the patients from this place to a higher or drier locality, *e.g.*, the Peak at Hongkong or Macao. Of this fact I had recently two well-marked examples.

Both at first suffered from quotidian ague, and in one the disease gradually assumed the remittent type. These patients obtained almost immediate relief after leaving here. One of them assured me that he felt better as soon as his steamer had crossed the Saltflats, a few miles from Canton, and that within 48 hours his temperature had fallen from 104° F. to below 100° F. These persons were again attacked by the disease shortly after their return, and this notwithstanding that they had been taking quinine in sufficient doses to produce deafness. I had, therefore, to advise them to go to Macao, where they quickly became convalescent.

Almost one-third of the foreign residents suffered from influenza.

With the majority the symptoms were very mild. The initial pyrexia in two cases reached 105° F., and with a few the bronchitis and subsequent prostration were severe and persistent. Bronchitis was the only pulmonary complication I noticed in connexion with this epidemic. Nutrients and tonics—*e.g.*, cod-liver oil and Fellows's syrup—did much, I believe, to relieve these symptoms and to hasten convalescence; cough mixtures, I found, were of little use.

Influenza was credited by the Chinese as the cause of the high mortality which lately prevailed in the city, and which ceased with the beginning of the rainy season. It probably was only one factor, the principal cause being the filthy water that they were obliged to procure from the canals. I have not, however, been able to learn of the existence of enteric fever. That the deaths were exceedingly numerous was evidenced by the fact that coffins worth $8 were difficult to procure at $20.

The following meteorological abstract has been prepared by Mr. Harbour Master MAY:—

ABSTRACT of CANTON CUSTOMS METEOROLOGICAL TABLES, April 1889 to March 1891.

Month.	Wind.							Weather.			Barometer.				Thermometer.			
											Day.		Night.		Day.		Night.	
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Calm.	Average Hourly Force.	No. of Days Fog.	No. of Days Rain.	Rainfall.	Highest Reading and Average Highest.	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.
1889.							miles			Inches.	Inches.	Inches.	Inches.	Inches.	°	°	°	°
April	1	21	...	...	8	...	6.8	1	16	6.99	30.230 30.084	29.860 30.003	30.200 30.044	29.830 29.968	92.00 78.60	59.00 69.10	81.00 73.80	59.00 67.60
May	3	22	...	...	6	...	7.6	...	21	17.67	30.204 30.030	29.732 29.954	30.130 30.008	29.754 29.969	92.00 84.20	69.00 76.00	86.00 80.20	68.00 73.40
June	...	8	9	1	12	...	5.8	...	21	7.47	30.070 29.936	29.722 29.879	30.050 29.923	29.670 29.874	93.00 88.80	76.00 79.20	92.00 84.90	75.00 77.80
July	...	11	5	...	15	...	7.0	...	13	2.83	30.090 29.912	29.634 29.847	30.015 29.878	29.700 29.841	97.00 93.00	74.00 81.30	97.50 87.30	71.00 78.70
August	3	17	1	2	8	...	7.4	...	15	9.23	30.100 29.925	29.650 29.857	30.080 29.902	29.630 29.835	96.50 90.10	73.00 79.20	87.00 83.40	74.00 77.50
September	5	13	...	...	12	...	5.8	...	11	3.15	30.182 30.081	29.890 30.004	30.180 30.029	29.900 30.002	96.40 90.20	74.50 79.40	88.50 83.60	69.00 76.20
October	15	5	1	2	8	...	6.2	...	9	5.51	30.254 30.164	29.830 30.083	30.230 30.119	29.700 30.058	94.00 85.10	66.50 74.30	93.00 78.80	61.00 71.40
November	20	1	...	3	6	...	6.8	...	10	0.87	30.546 30.196	29.982 30.091	30.530 30.118	29.978 30.069	86.50 74.20	52.00 63.80	80.00 70.30	49.00 62.70
December	16	...	...	1	14	...	7.4	...	4	0.18	30.506 30.297	30.034 30.197	30.440 30.227	30.030 30.169	84.00 70.10	48.00 55.00	81.00 64.70	42.00 52.20
1890.																		
January	13	1	...	...	17	...	7.1	...	10	2.33	30.490 30.304	29.900 30.212	30.470 30.269	29.850 30.204	83.00 65.40	42.00 52.00	78.20 58.20	37.00 49.90
February	9	6	...	...	13	...	7.5	1	11	1.48	30.414 30.177	29.758 30.079	30.372 30.123	29.700 30.049	83.50 70.70	47.00 56.80	81.90 63.90	43.00 54.50
March	17	2	1	2	9	...	6.6	1	22	4.66	30.390 30.134	29.880 30.046	30.378 30.103	29.870 30.054	86.00 65.20	45.00 57.30	77.00 62.00	42.00 54.60
April	3	12	...	...	15	...	6.5	...	17	9.22	30.260 30.049	29.754 29.960	30.222 30.016	29.780 29.999	88.50 79.50	56.50 70.90	87.00 75.60	45.00 67.60
May	1	19	...	...	10	1	5.8	...	22	12.66	30.056 29.951	29.764 29.874	30.042 29.944	29.770 29.889	92.00 84.50	70.50 75.80	85.00 80.10	67.00 74.20
June	...	22	1	...	7	...	6.3	...	26	8.48	29.950 29.881	29.684 29.819	29.996 29.860	29.702 29.810	92.00 86.70	74.00 78.60	87.00 83.20	73.00 76.40
July	...	16	3	...	12	...	5.2	...	21	13.17	29.968 29.831	29.600 29.777	29.955 29.823	29.622 29.765	95.00 87.60	74.00 78.60	93.00 83.30	72.00 77.50
August	...	14	3	...	13	1	4.0	...	21	8.98	30.030 29.890	29.704 29.824	30.000 29.866	29.734 29.828	95.50 88.80	73.00 79.00	96.00 83.40	69.00 76.00
September	7	6	2	1	14	...	3.7	...	8	2.86	30.044 29.941	29.750 29.870	30.110 29.923	29.720 29.878	97.00 88.80	63.00 76.40	86.00 81.20	63.00 73.30
October*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
November	9	8	...	3	10	...	...	2	5	...	30.350 30.204	30.020 30.124	30.370 30.200	30.060 30.158	86.00 79.60	51.00 65.00	81.00 69.90	48.00 61.50
December	10	4	1	2	14	...	...	1	11	...	30.510 30.258	29.950 30.146	30.400 30.231	30.060 30.166	84.00 73.20	47.00 60.20	77.50 65.50	42.00 58.20
1891.																		
January	12	1	1	2	14	1	...	...	3	...	30.477 30.326	30.062 30.208	30.380 30.274	30.069 30.224	80.00 72.00	45.00 56.40	77.00 63.40	43.00 52.40
February	5	6	...	3	14	...	...	2	6	...	30.690 30.349	29.912 30.255	30.570 30.304	29.790 30.244	82.00 65.30	42.50 54.70	72.00 60.10	41.00 51.80
March	10	3	2	3	12	1	...	...	19	...	30.460 30.216	29.900 30.132	30.370 30.186	29.820 30.122	76.50 64.60	46.00 55.80	75.00 63.00	44.00 54.50

* The records for October were destroyed in the fire which consumed the Customs Examination Shed on the 25th October 1890. In consequence of the destruction, through the same cause, of the anemometer and rain gauge, no record of the force of wind or the actual measurement of rain could be supplied.

REMARKS.—**1889**: During April the highest reading of the barometer was 30.230, on the 20th; and the lowest 29.830, on the 26th. The highest temperature was 92°, on the 28th; and the lowest 59°, on the 20th and 22nd. S.E. winds prevailed, and the strongest was recorded on the 7th, averaging 11.7 miles an hour during 24 hours. Rain fell on 16 days, measuring 6.99 inches.—During May the highest reading of the barometer was 30.204, on the 8th; and the lowest 29.732, on the 30th. The highest temperature was 92°, on the 31st; and the lowest 68°, on the 24th. S.E. winds prevailed, and the strongest was recorded on the 3rd, averaging 12.6 miles an hour during 24 hours. Rain fell on 21 days, measuring 17.67 inches.—During June the highest reading of the barometer was 30.070, on the 26th; and the lowest 29.670, on the 16th. The highest temperature was 93°, on the 1st; and the lowest 75°, on the 11th and 18th. S.W. winds prevailed, and the strongest was recorded on the 22nd, averaging 9 miles an hour during 24 hours. Rain fell on 21 days, measuring 7.47 inches.—During July the highest reading of the barometer was 30.090, on the 3rd; and the lowest 29.634, on the 16th. The highest temperature was 97°.5, on the 24th; and the lowest 71°, on the 26th. S.E. winds prevailed, and the strongest was recorded on the 18th, averaging 13 miles an hour during 24 hours. Rain fell on 13 days, measuring 2.83 inches.—During August the highest reading of the barometer was 30.100, on the 7th and 8th, and the lowest 29.630, on the 15th. The highest temperature was 96°.5, on the 1st; and the lowest 73°, on the 23rd. S.E. winds prevailed, and the strongest was recorded on the 16th, averaging 32 miles an hour during 24 hours. Rain fell on 15 days, measuring 9.23 inches.—During September the highest reading of the barometer was 30.182, on the 13th; and the lowest 29.890, on the 7th. The highest temperature was 96°.4, on the 5th; and the lowest 69°, on the 12th. S.E. winds prevailed, and the strongest was recorded on the 1st, averaging 10 miles an hour during 24 hours. Rain fell on 11 days, measuring 3.15 inches.—During October the highest reading of the barometer was 30.254, on the 1st; and the lowest 29.700, on the 16th. The highest temperature was 94°, on the 4th and 7th; and the lowest 61°, on the 31st. N.E. winds prevailed, and the strongest was recorded on the 21st, averaging 11.3 miles an hour during 24 hours. Rain fell on 9 days, measuring 5.51 inches.—During November the highest reading of the barometer was 30.546, on the 13th; and the lowest 29.978, on the 8th. The highest temperature was 86°.5, on the 8th; and the lowest 49°, on the 14th. N.E. winds prevailed, and the strongest was recorded on the 11th, averaging 14.1 miles an hour during 24 hours. Rain fell on 10 days, measuring 0.87 inch.—During December the highest reading of the barometer was 30.506, on the 13th; and the lowest 30.030, on the 7th. The highest temperature was 84°, on the 31st; and the lowest 42°, on the 5th. N.E. winds prevailed, and the strongest was recorded on the 12th, averaging 17 miles an hour during 24 hours. Rain fell on 4 days, measuring 0.18 inch.—**1890**: During January the highest reading of the barometer was 30.490, on the 4th; and the lowest 29.850, on the 25th. The highest temperature was 83°, on the 1st; and the lowest 37°, on the 5th. N.E. winds prevailed, and the strongest was recorded on the 3rd, averaging 15.2 miles an hour during 24 hours. Rain fell on 10 days, measuring 2.33 inches.—During February the highest reading of the barometer was 30.414, on the 11th; and the lowest 29.700, on the 16th. The highest temperature was 83°.5, on the 17th; and the lowest 43°, on the 11th. N.E. winds prevailed, and the strongest was recorded on the 18th, averaging 13.6 miles an hour during 24 hours. Rain fell on 11 days, measuring 1.48 inches.—During March the highest reading of the barometer was 30.390, on the 5th; and the lowest 29.870, on the 9th. The highest temperature was 86°, on the 21st; and the lowest 42°, on the 1st. N.E. winds prevailed, and the strongest was recorded on the 23rd, averaging 13.8 miles an hour during 24 hours. Rain fell on 22 days, measuring 4.66 inches.—During April the highest reading of the barometer was 30.260, on the 4th; and the lowest 29.754, on the 24th. The highest temperature was 88°.5, on the 29th; and the lowest 45°, on the 2nd. S.E. winds prevailed, and the strongest was recorded on the 18th, averaging 10.6 miles an hour during 24 hours. Rain fell on 27 days, measuring 9.22 inches.—During May the highest reading of the barometer was 30.056, on the 14th; and the lowest 29.764, on the 9th. The highest temperature was 92°, on the 18th; and the lowest 67°, on the 3rd. S.E. winds prevailed, and the strongest was recorded on the 7th, averaging 10.5 miles an hour during 24 hours; one day (the 13th) was calm throughout. Rain fell on 22 days, measuring 12.66 inches.—During June the highest reading of the barometer was 29.996, on the 24th; and the lowest 29.684, on the 29th. The highest temperature was 92°, on the 17th; and the lowest 73°, on the 1st and 7th. S.E. winds prevailed, and the strongest was recorded on the 30th, averaging 9.9 miles an hour during 24 hours. Rain fell on 26 days, measuring 8.48 inches.—During July the highest reading of the barometer was 29.968, on the 2nd; and the lowest 29.600, on the 17th. The highest temperature was 95°, on the 13th; and the lowest 72°, on the 25th and 26th. S.E. winds prevailed, and the strongest was recorded on the 26th, averaging 8.2 miles an hour during 24 hours. Rain fell on 21 days, measuring 13.17 inches.—During August the highest reading of the barometer was 30.030, on the 20th; and the lowest 29.704, on the 2nd. The highest temperature was 96°, on the 25th; and the lowest 69°, on the 9th. S.E. winds prevailed, and the strongest was recorded on the 13th and 17th, averaging 6 miles an hour during 24 hours; one day (the 30th) was calm throughout. Rain fell on 21 days, measuring 8.98 inches. A slight shock of earthquake, travelling in a southerly direction, was felt on the 30th at 9.50 P.M.—During September the highest reading of the barometer was 30.110, on the 27th; and the lowest 29.720, on the 5th. The highest temperature was 97°, on the 30th; and the lowest 63°, on the 25th. N.E. winds prevailed, and the strongest was recorded on the 8th, averaging 6.8 miles an hour during 24 hours. Rain fell on 8 days, measuring 2.86 inches.—During November the highest reading of the barometer was 30.370, on the 11th and 13th; and the lowest 30.020, on the 10th (readings taken from aneroid by Messrs. G. FALCONER & Co., Hongkong and London). The highest temperature was 86°, on the 8th and 9th; and the lowest 48°, on the 13th. N.E. winds prevailed. Rain fell on 5 days.—During December the highest reading of the barometer was 30.510, on the 30th; and the lowest 29.950, on the 27th (readings taken from standard barometer No. 647, by ADIE, London). The highest temperature was 84°, on the 4th; and the lowest 42°, on the 31st. N.E. winds prevailed. Rain fell on 11 days.—**1891**: During January the highest reading of the barometer was 30.477, on the 15th; and the lowest 30.062, on the 30th. The highest temperature was 80°, on the 12th, 23rd and 27th; and the lowest 43°, on the 15th. N.E. winds prevailed. Rain fell on 3 days.—During February the highest reading of the barometer was 30.690, on the 12th; and the lowest 29.790, on the 4th. The highest temperature was 82°, on the 24th and 27th; and the lowest 41°, on the 6th. S.E. winds prevailed. Rain fell on 6 days.—During March the highest reading of the barometer was 30.460, on the 23rd; and the lowest 29.820, on the 16th. The highest temperature was 76°.5, on the 1st; and the lowest 44°, on the 27th. N.E. winds prevailed. Rain fell on 19 days.

DR. C. C. DE BURGH DALY'S REPORT ON THE HEALTH OF NINGPO

For the Half-year ended 31st March 1891.

Births: two living, one stillborn. Deaths: none.

The health of the community has been excellent, giving me, as usual, little or nothing of interest to report about foreigners; the only serious case occurring amongst them was one of acute rheumatism, which is only now, as I write this, slowly recovering after six weeks' illness.

The fever which it has become fashionable to call influenza, although it has very little resemblance to ordinary influenza, was epidemic here in the autumn. A few foreigners and a large number of natives suffered from it. No fatal case occurred in my practice.

The symptoms in the acute cases were chill, followed by high fever, rapidly reaching 103° or 105°, with severe pains referred to the bones. The fever lasted from two to seven days, then rapidly subsided, leaving behind, in many cases, a most persistent, troublesome cough. The treatment generally recommended was rest in bed, and aconite internally, while the fever lasted, and sedatives for the cough. I found quinine, antipyrin, etc., had rather an injurious effect.

In marked contrast to the autumn of 1889, the weather here last autumn was very fine, and, consequently, very few cases of intermittent fever occurred amongst the foreigners.

The diseases prevalent amongst the natives were intermittent fevers of the various types, quartan ague being the commonest; continuous fevers, divided by the natives into 7, 14, and 21 days' fever; measles and small-pox; and in the autumn cholera and dysentery.

RAPPORT SANITAIRE DU DISTRICT DOUANIER DE LAPPA

Pour le Semestre finissant le 31 mars 1891.

Les conditions spéciales du district de Lappa, comparables, si l'on veut, à celles du district de Kowloon, ôtent toute ombre d'intérêt au rapport clinique qu'on puisse faire exclusivement sur lui. Le nombre des résidents étrangers n'est que trop restreint et encore ceux-là, des employés de la Douane impériale, n'habitent que les postes douaniers de Chinsan et Malowchow. Le reste, y compris tout le personnel de l'*In-door* et une partie de celui de l'*Out-door Staff* de la Douane de Lappa, réside à Macao, établissement portugais limitrophe du district.

Les cas fournis à l'histoire nosologique du district de Lappa par les résidents étrangers ont été pendant le semestre d'octobre 1890 à mars 1891—et généralement ils le sont toujours—tout-à-fait dénués d'intérêt clinique. Pour ce qui regarde la pathologie indigène, les données que l'on peut obtenir dans un pays où on ne connait guère la statistique et où la médecine est exercée par des charlatans, sont toujours insuffisantes, quand elles ne sont pas fausses.

Voilà pourquoi, invité à faire le rapport clinique du dernier semestre au district de Lappa, j'ai dû me rapporter aux environs de ce district, spécialement à Macao.

Le climat du district douanier de Lappa et de ses environs est, sans contredit, un des plus doux, s'il n'est pas le plus sain, de toute la côte de la Chine. Le voisinage des rizières qui couvrent le sol de l'île de Hianshan à peine se fait-il sentir sur le littoral; et il n'y a que le poste douanier de Chinsan qui de temps à autre produit quelques cas de paludisme, plus ou moins graves, surtout chez les Européens arrivés d'autres contrées marécageuses.

Le poste de Malowchow avait donné, dès son installation, assez de cas d'infection paludéenne. Les mesures qu'on a pris pour l'assainissement des habitations dans ce poste ont fait disparaître tout-à-fait ces cas; et il n'arrive aujourd'hui que rarement d'y rencontrer quelques cas pathologiques sans valeur, soit du rhumatisme ou des bronchites, surtout dans la saison favorable à ces manifestations morbides—février à avril.

À Macao, pendant le semestre qui vient de s'écouler, rien n'a alteré l'état sanitaire normal du pays si ce n'est les épidémies de variole et d'*influenza*, dont la première a sévi dès le mois de janvier et l'autre surtout en février.

Je ne saurais à la rigueur appeler la variole qui a sévi à Lappa et dans ses environs une épidémie, puisque la variole y vient chaque année, endémique et tant soit peu meurtrière. Seulement, cette fois-ci elle ne s'est pas confinée aux indigènes, elle s'est portée sur les résidents et les non-résidents étrangers.

À l'hôpital militaire de Macao on n'a eu que trois décès, un Chinois et deux soldats de la garnison indienne (Mahrattas), dont pas un seul n'avait été vacciné. À l'hôpital civil on a eu un seul décès, un enfant indien, non vacciné, lui aussi. Dans la clinique des médecins établis à Macao on a compté jusqu'à 14 cas de décès, tous des naturels de Macao.

D'une façon générale, on peut dire que les individus qui avaient été vaccinés et surtout revaccinés n'ont eu que la variole discrète, voire même la varioloïde; la variole confluente et surtout la forme hémorrhagique n'ont fait des ravages que sur des individus non vaccinés. Il

faut, pourtant, faire exception d'un cas de variole hémorrhagique survenu dans une femme en couches, laquelle, dit-on, avait été vaccinée dans son enfance. Je crois que ce fut le seul cas et encore on ne doit peut-être trop s'y appesantir, car il y avait longtemps que la vaccination avait été faite.

Mais ce qui est un argument de première ligne en faveur des avantages de la vaccination c'est que, ayant vacciné moi-même dans le mois de janvier 693 indigènes, qui devaient s'embarquer comme passagers sur le bateau à vapeur *Independent*, pour le Mexique, je les ai vus se promener partout dans la ville et ses environs, au milieu de l'épidémie, dont pas un seul ne fut frappé. Et pourtant ils ne se sont embarqués que pendant les premiers jours de mars.

Le premier cas d'*influenza* que j'ai observé dans le dernier semestre, ce fut à la fin de janvier, à bord d'une chaloupe à vapeur de la Douane impériale. Il y avait 10 matelots indigènes frappés ensemble, plus le second, un Européen, qui était allé se soigner à terre. Puis, dans quelques jours l'*influenza* s'était repandue partout, chez les Européens comme chez les indigènes.

L'épidémie s'est montrée toujours la même, sauf l'intensité des symptomes. Invasion sans prodromes; céphalalgie, rachialgie, prostration générale; fièvre, atteignant parfois 40° et plus rarement 41° centigrades (104° à 106° Fahrenheit); anorexie, soif, langue rouge sur les bords et à la pointe, couverte d'un enduit jaunâtre sur le dos; nausées, allant par exception jusqu'au vomissement; toux, d'abord faible, puis un peu plus forte; phénomènes stéthoscopiques nuls ou à peu près. Le traitement dans les cas les plus légers se bornait aux diaphorétiques (jaborandi, poudre de Dover), quelques fois on employait avec succès la quinine, mais dans la majorité des cas il fallait recourir à l'antipyrine (3 à 4 grammes, soit 45 à 60 grains, dans la journée).

Les symptômes, qui subsistaient au delà du deuxième jour, étaient généralement la toux, accompagnée ensuite des râles humides de la bronchite, surtout dans les individus prédisposés; l'expectoration facile ou s'établissant aisément par le moyen des expectorants et balsamiques (kermès, Tolu, etc.); l'anorexie toujours difficile à débouter avant le quatrième ou le cinquième jour, demandant mainte fois l'emploi d'un purgatif léger (citrate de magnésie, sulfate de soude). La fièvre, la céphalalgie, la prostration générale, qui cédaient sous l'action de l'antipyrine, ne revenaient que si le malade abusait des forces dont il croyait disposer et qui n'étaient que fictives. En se mettant au grand air, sans la moindre précaution, il attrapait souvent une pneumonie, quelquefois une pleurésie, une bronchite capillaire, etc. Ces cas exceptés, je n'ai jamais observé la fièvre de retour, dont quelques habiles médecins font pourtant un symptôme fréquent de l'*influenza*.

C'est vraiment à regretter que ni même à Macao, où il y a un hôpital chinois, on ne puisse obtenir des données positives sur les ravages produits par les épidémies de variole et d'*influenza* pendant le trimestre qui vient de finir. *Mutatis mutandis*, on peut dire de la statistique chinoise de Macao ce que le docteur JAMIESON a dit de celle de Shanghaï:—

Formal statistics collected from Tipao are absolutely valueless. They are falsified either designedly or through idle carelessness.*

Il y a, pourtant, un moyen d'estimer la mortalité produite par les susdites épidémies parmi la population chinoise de Macao; c'est de comparer la nécrologie absolue du dernier trimestre avec celle du premier trimestre des années précédentes. Pour y arriver, on peut consulter la statistique du cimetière chinois de Macao. Certes, le moyen n'est pas absolument sûr; car d'abord la population indigène de Macao n'est pas toujours la même, elle n'est que trop

* Customs *Medical Reports*, xxxvi, 11.

flottante dans sa grande majorité; puis, les enterrements des résidents chinois ne se font pas tous à Macao; il y a parfois des cadavres qui sont transportés en Chine pour y être inhumés, surtout à Lappa et à Canton. Mais, d'un autre côté, on peut admettre que pendant les épidémies la proportion des cadavres transportés au dehors de Macao reste la même qu'auparavant; et, après tout, il faut avouer que la différence est tellement frappante qu'on ne peut l'attribuer qu'aux ravages épidémiques.

Au fait, la moyenne des cinq derniers ans, 1886–90, donne pour la population chinoise de Macao, dans le prémier trimestre, janvier à mars, une mortalité de 412, ce que pendant les trois mois qui viennent de s'écouler a monté au chiffre assez sensible de 809, soit à peu près le double.

Quant à l'influence de la saison je la trouve bien difficile à saisir. Cette année l'hiver a été très-doux; on n'a pas eu les pluies qui en règle générale caractérisent les mois de février et mars dans ces pays, et le froid même n'est jamais tombé au-dessous de 9° centigrades. Les années précédentes, l'hiver a été autrement rigoureux; pourtant, ni la variole ni l'*influenza* n'ont fait de ravages que l'on puisse comparer à ceux de l'année courante.

TABLEAU I.

Enterrements au Cimetière chinois de Macao pendant le Trimestre janvier–mars.

CADAVRES.	1886.	1887.	1888.	1889.	1890.	MOYENNE.	1891.
Hommes	122	148	149	150	149	143	293
Femmes	101	102	149	101	104	112	254
Enfants	152	178	250	123	82	157	262
TOTAL	375	428	548	374	335	412	809

TABLEAU II.

Enterrements de non-Chinois au Cimetière catholique de Macao pendant le dernier Semestre.

MALADIES QUI ONT CAUSÉ LA MORT.	Octobre.	Novembre.	Décembre.	Janvier.	Février.	Mars.	TOTAL.
Lésions des appareils—							
Respiratoire	...	5	1	4	6	7	23
Digestif	1	...	...	...	...	2	3
Circulatoire	1	...	...	1	...	1	3
Nerveux	1	...	...	1	...	...	2
Génito-urinaire	...	1	...	...	...	...	1
Variole	...	...	1	3	4	7	15
Sénilité	3	...	...	1	7	...	11
Autres maladies	3	...	...	...	3	1	7
TOTAL	9	6	2	10	20	18	65

Les Européens décédés ont été au nombre de quatre, tous Portugais et militaires; les causes de décès ont été hérnie inguinale étranglée, suicide, paludisme et tuberculose.

Au district de Lappa on n'a pas eu de décès d'Européen.

Résumé des principales Observations météorologiques faites à l'Observatoire de Macao pendant le Semestre finissant le 31 mars 1891.*

Observations.		Octobre.	Novembre.	Décembre.	Janvier.	Février.	Mars.
Pression	maxima	30.217	30.260	30.337	30.346	30.513	30.346
	minima	29.696	29.990	29.880	29.957	29.825	29.751
	oscillation quotidienne	0.059	0.062	0.064	0.060	0.065	0.063
Température	maxima	97.00	83.00	82.00	82.00	81.00	82.00
	minima	64.00	53.00	53.00	49.00	45.00	52.00
	oscillation moyenne	20.00	15.86	13.51	15.57	12.96	9.45
Humidité	maxima	95.00	95.00	100.00	94.00	100.00	100.00
	minima	40.50	21.00	39.50	42.00	36.00	53.50
Pluie	quantité en pouces	0.08	0.17	4.04	0.11	...	2.65
	nombre de jours	1	1	3	1	...	7
État du ciel	beau ou presque, jours	18	17	14	17	1	...
	moyenne nebulosité, jours	12	11	13	13	10	10
	couvert ou presque, jours	1	2	4	1	17	21
Vent	vélocité moyenne diurne	68k.1	55k.5	64k.8	58k.9	51k.1	59k.9
	direction	N. 26° 5′ E.	N. 31° E.	N. 49° 5′ E.	N. 36° E.	N. 1° O.	N. 22° E.

* Extrait d'un tableau que je dois à la bienveillance de M. J. C. Alcotra, Capitaine du port de Macao.

Baromètre à 32° Fahrenheit au niveau de la mer. Échelle en pouces anglaises. Thermomètre à l'air, en degrés Fahrenheit.

G. S.

Dr. B. STEWART RINGER'S REPORT ON THE HEALTH OF AMOY

For the Year ended 31st March 1891.

During the 12 months ended 31st March 1891 the health of the foreign community at this port has been fairly good, and the locality has been free from any serious epidemic.

During the spring of the year 1890 several cases of influenza, characterised by muscular pains, sore throat, fever and protracted convalescence, were attended; there were also others, however, of a milder type generally, which under different circumstances would have been classed as cases of ordinary catarrh.

The summer was neither excessively hot nor long, and although some severe cases of malarial fever and diarrhœa occurred, the season was, on the whole, healthy.

Thirteen births and two deaths have to be recorded. Among the former, one labour was terminated by the aid of the short forceps, in consequence of uterine inertia; the rest were normal. Of the two deaths, the first occurred in January 1890, and resulted from exhaustion following chronic diarrhœa, which had continued for three years, in one who had resided for many years amongst the Chinese up country; the second took place in May from drowning, the result of a boating accident.

A somewhat severe outbreak of purulent ophthalmia was attended during the months of July and August at the Roman Catholic Orphanage, where 60 Chinese children are resident; and notwithstanding the various precautions taken, more than one-third of the children were attacked.

The instillation of a nitrate of silver solution, frequent cleansings with zinc lotion, and guarding the eyes from the light, in some instances, cut short the attack; but in others the disease proved most intractable, and in two cases staphyloma followed the severe ulceration of the cornea which previously existed.

In the early part of the present year (1891) many cases of measles were reported among the Chinese in the neighbourhood of the foreign Settlement; and as the natives are most unguarded and careless in connexion with the spread of contagion, it was feared that the disease might extend widely among the foreign community; but every effort was made to prevent this, and, happily, only three or four cases occurred, all of which terminated favourably.

It is noteworthy that the rainy season was retarded this year, with the unpleasant result that the water in several of the wells, which is usually clear and fresh, became so brackish that it was quite undrinkable and most disagreeable to wash in. I was informed that many of the Chinese were much concerned about this matter, and sought the aid of their deities, considering it likely that the long drought would be followed by some violent outbreak of epidemic disease—and probably not without some reason. However, a timely downpour of rain rapidly restored confidence and soon removed the unpleasant condition.

DR. A. IRWIN'S REPORT ON THE HEALTH OF TIENTSIN

For the Half-year ended 31st March 1891.

WITH the exception of an epidemic of influenza and several cases of the so-called typho-malarial fever, the health of the foreign community, notwithstanding the inundated state of the surrounding country, has been fairly good.

One death took place from typho-malarial fever, the origin of the disease in this case being clearly traceable to exposure to the emanations from freshly turned-up soil.

Two deaths occurred among the shipping in port—one from meningitis, the other from phthisis.

Very few residents escaped the influenza; but, as a general rule, the attack was very mild, lasting about three days. In two cases pneumonia set in, but in each only the base of the right lung was attacked, and in neither case was there any cause for anxiety.

The foreign population of the Settlement numbers about 250. Nearly all are strong and healthy; so that, as far as they are concerned, the materials for writing a medical report are almost *nil*.

At the native hospitals no cases of any special interest presented themselves during the period under review.

DR. GEORGE R. UNDERWOOD'S REPORT ON THE HEALTH OF KIUKIANG

For the Half-year ended 31st March 1891.

DURING the past six months the health of the foreign residents has been good on the whole, though the number of minor ailments has certainly been above the average. The autumn was dry and pleasant, with much sunshine, and the winter has not been colder or more rainy than usual.

As in former years, malaria, in the form of quotidian or tertian ague, has been the complaint most frequently met with. In every case of the 24 treated a purge, followed by a few full doses of quinine, or, better, quinine combined with salicylate of soda, sufficed to check the fever. Foreign children born in this place have an especial liability to malarial attacks, while adult residents who have not lived in aguish districts before settling here may escape it altogether.

Influenza found its way to this port, fortunately not in epidemic form so far as foreigners were concerned, and three patients came under my care.

The first—A. B., 48, male—awoke one morning not feeling well, and two hours afterwards, on my seeing him, he complained of giddiness, sickness with vomiting, and difficulty in breathing. His temperature was 102°, and the pulse 116. The urgent symptoms were relieved by rest, poultices and medicinal treatment. The temperature became normal after five days, and 12 days from the beginning of the attack the giddiness, which had been to him most alarming, had all but gone. This patient has for years been the subject of irritable heart, and every few months required to have digitalis or strophanthus. While other symptoms disappeared, the pulse, up to three weeks from the date of seizure, varied from 90 to 100, the average in health being 80, and his strength was regained very slowly.

In a second case—C. D., 40, male—the attack began with slight headache, chilliness, rise of temperature to 100°.8, and a little cough. The next day the cough continued, otherwise the patient felt better, and had no headache or fever. For a week after this he had little appetite, and felt languid and disinclined to work. He then began to complain of palpitation and discomfort in the region of the heart, which hindered him from sleeping well at night. On examination the heart's action was found to be irregular, one contraction in every seven or eight following too quickly on the preceding one, and the pulse was weak, with a rate of 45 to 50. Complete rest, a dietary from which tea and coffee, found by the patient to increase the palpitation, were excluded, with tincture of strophanthus in 5-minim doses, three times a day, caused the irregular action to cease, and the pulse returned to its normal (70–72) in a fortnight. Three months passed before the patient felt thoroughly well.

In the third case bronchial catarrh was the prominent feature. Convalescence, though prolonged, was complete.

Two residents suffered from simple continued fever, a form of illness not often seen here in winter.

In the first—E. F., female, 32—there was at the onset severe headache, slightly furred tongue, loss of appetite, constipation, and inability to sleep well at night. The evening temperature for 18 days fluctuated between 100° and 101°.8, and that of the morning from 1° to 1°.5 lower. After this the thermometer never registered over 100°, and by the end of the fourth week the temperature was normal. Antipyrin relieved the headache, but neither that drug, quinine, nor quinine and salicylate of soda had any effect on the fever. There was at no time any abdominal tenderness, and pulmonary symptoms were entirely absent. It was from the beginning uncomplicated, simple continued fever. Convalescence, once it began, was satisfactory.

On 5th February I was asked to see G. H., 26, male, who had been suffering from fever from the 1st of the month. The patient, who was 5 feet 9 inches in height, of average build, and in fair muscular condition, told me that he had been living in a malarious district in the interior, and thought that he had ague. When I examined him, at 10 A.M., his pulse was 78, respirations 8.5, and temperature 101°, and his skin was soft and moist. He had no headache; the tongue was clean; he had desire for food; the abdomen was full, with slight tenderness over the right iliac region (this was not found again); his bowels were constipated; and he could sleep quite well at night. He had had what he considered an aguish attack at 4 P.M. the day previous, when the temperature was 103°.8. The bowels were cleared; quinine with salicylate of soda in full doses given three times a day, with a diet of milk and soups, with the result that after 12th February the temperature only once rose to 101°.5, and the intermittent crises ceased. There remained for three weeks more an increase of temperature, varying from 0°.5 to 2°, and this, uninfluenced by medicinal treatment, gradually passed off. Cascara was not a success in the treatment of the constipation, which held throughout the illness, and, when required, castor oil was preferred. The irregularly slow respiratory rate was a noteworthy feature in the case, and with convalescence the frequency increased. The patient's ordinary rate I found to be 12 per minute. All through the illness there was neither headache nor thirst, and the tongue remained free from coating. Appetite and digestion continued good, with the exception of two days, when constipation had been unrelieved, though, of course, the patient lost weight. In both this case and the preceding one a change of air would have been most beneficial had the season permitted, and the feverishness would have been got rid of much sooner. The data of the pulse, respirations and temperature are under-noted :—

Date.	Pulse.	Respirations.	Temperature.	Date.	Pulse.	Respirations.	Temperature.	Date.	Pulse.	Respirations.	Temperature.
			°				°				°
Feb. 5	78	8.5	101.0	Feb. 15	70	10	98.5	Feb. 25	70	10	99.0
	...	...	...		72	10	99.6		...	...	...
" 6	78	8.5	101.0	" 16	69	12	98.4	" 26	74	10	99.5
	94	8.5	102.8		72	10	99.9		68	10	99.0
" 7	78	4.5	101.8	" 17	72	9	99.6	" 27	70	9	98.4
	90	5.5	102.8		92	8	101.5		68	11	98.4
" 8	69	10	100.3	" 18	86	7	100.0	" 28	78	11	99.3
	78	10	102.0		...	...	...		72	11	99.0
" 9	72	12	101.4	" 19	78	9	100.0	March 1	74	10	99.4
	84	12	102.8		72	10	99.2		...	...	99.2
" 10	74	11	100.6	" 20	68	11	99.2	" 2	78	10	98.8
	80	12	101.8		70	10	99.0		...	...	98.6
" 11	70	8	100.0	" 21	68	11	99.4	" 3	78	12	99.2
	76	12	101.8		70	11	99.4		...	...	99.2
" 12	64	6	98.9	" 22	72	10	99.0	" 4	...	...	99.2
	78	6	99.6		...	...	99.9		...	...	99.0
" 13	72	12	99.3	" 23	72	9	99.2	" 5	74	...	99.0
	78	12	100.4		72	10	99.8		...	...	98.6
" 14	72	12	98.8	" 24	78	9	99.2	" 6	76	12	99.0
	78	12	100.4		88	12	100.4		...	...	98.4

The following notes of a case of hepatic abscess present some points of interest:—

E. T., male, 48, consulted me on 28th November regarding pain and uneasiness in the right hypochondriac region. The patient, a man of sedentary habits, is about 5 feet 8 inches, of fair muscularity, though its quality was somewhat flabby. The face was pale and anæmic (before this illness began his appearance denoted anæmia), and without any yellowish tint, nor was the conjunctiva in the least degree stained. The pulse was 86 and the temperature 101° at 9 P.M., when examined. He stated that about the middle of September he had severe neuralgia of the scalp, and, to relieve it, took several large doses of salicylate of soda. This proceeding brought on diarrhœa, and with it the pain from which he still suffered and from which he had not been free since. With the pain there had been fever, more or less and constant. The bowels had been constipated, the dejecta not specially light coloured; and flatulence had caused much annoyance. The abdomen was found to be much distended with flatus; an ill-defined swelling, with tenderness on palpation, could be made out over the ascending colon, especially at the upper part, but whether the hepatic area was increased could not be determined. Means were taken to get rid of the gas in the bowels, and then the lower margin of the right lobe of the liver could be felt ¾ inch below the ribs, at a point 2 inches internal to the nipple line, and over this area there was tenderness. At the nipple line, and to the right of it, the lower margin of the liver could not be felt below the ribs, though pressure showed tenderness. There was no enlargement upwards, and auscultation revealed nothing. The stools were natural in colour. The patient could lie on either side in bed, but felt most comfortable when on his back. The pain had hindered his getting good sleep for weeks. The provisional diagnosis was "abscess." Salines were at first given, with a diet largely of milk; but digestion became so impaired that all medicines were stopped except to relieve the constipation, and the patient's strength supported as much as possible. Mustard poultices and hot water were useful in relieving the pain.

During the first two weeks after coming under my care the lower border of the left side of the right lobe descended slowly till it was 1½ inch below the costal margin. The fever continued irregular—one evening the temperature 99°, the next perhaps 102°, always above the normal, and the pulse fluctuated with the temperature.

On 18th December an aspirator needle was passed deeply into the liver, at a point just below the ribs and 2½ inches internal to the line of the nipple, but no pus was found. The pain after this puncture became more localised in the nipple line at the costal margin, and the lower border began to be felt there. The area below the ribs increased till it extended 2 inches downwards, and the lower border could be traced distinctly to the left lobe. The diagnosis was now becoming unmistakeable. On 27th December (Dr. GILLISON giving chloroform and rendering other valuable assistance) a needle was passed into the liver just below the costal margin in the nipple line, and pus was found. An incision was then made from above downwards, 3½ inches long, the needle remaining in place as a guide to the abscess cavity. The peritoneum was exposed, and the hepatic surface found to be adherent at the point of incision into the liver. The needle was withdrawn, a director pushed along its track into the cavity, and then a pair of dressing forceps used to dilate the opening. Pus to the extent of 8 ounces was evacuated, the abdominal peritoneum all this time being kept close upon the hepatic surface. The opening was further dilated by the finger, and the margin all round stitched to the abdominal wall. The cavity was washed out, a drainage tube put in, and a dressing of absorbent cotton wool applied, the surface of the wound being dusted with iodoform. The further progress of the case is under-noted:—

28th December, 9 A.M.—Temperature 98°.6. Patient had a good night. Eructations troublesome. Had iced bouillon with pepsine. After changing the dressing, tonic contractions of abdominal muscles, of reflex origin, caused severe pain in the liver. Gave ¼ grain of hydrochlorate of morphia subcutaneously.

9 P.M.—Temperature 98°.6; pulse 108. Morphia repeated.

29th December, 9 A.M.—Temperature 98°.6; pulse 84. Night not good, from discomfort caused by cream taken before bedtime. Vomited this morning, and felt relieved at once. Occasional spasmodic contractions of abdominal wall.

9 P.M.—Temperature 98°.6; pulse 84.

30th December, 9 A.M.—Temperature 98°.4; pulse 76. Had a good night. Contractions after the dressing is changed. 25 grains of powdered rhubarb caused a free movement.

9 P.M.—Temperature 98°.6; pulse 74.

31st December, A.M.—Temperature 98°.7; pulse 76. Night disturbed. Pain lasted two hours after changing the dressing last night. Carbolic acid (1 in 60), to wash out the cavity, instead of bichloride.

P.M.—Temperature 99°.2; pulse 76. Begins to look better. Still occasional eructations.

1st January, A.M.—Temperature 99°.4; pulse 86. Changed drainage tube under chloroform, and put in two—the calibre not being sufficient. Matter sero-sanguinolent, with, to-day, slight odour.

P.M.—Temperature 99°; pulse 84. Was sick after chloroform. Discharge free.

2nd January, A.M.—Temperature 99°; pulse 80. Reverted to bichloride lotion. Discharge free, no odour. Appetite poor.

P.M.—Temperature 99°; pulse 78.

3rd January, A.M.—Temperature 98°.7; pulse 80. Passed a fair night, but had considerable pain after washing out cavity, which is done each dressing. The abdomen is now flat.

4th January, A.M.—Temperature 98°.6; pulse 82. Again required powdered rhubarb, and had satisfactory motion.

P.M.—Temperature 98°.7; pulse 84.

5th January, A.M.—Temperature 98°.7; pulse 80. Good night. Changed tubes.

P.M.—Temperature 98°.6; pulse 82. Ordered bismuth, powdered rhubarb and bicarbonate of soda.

6th January, A.M.—Temperature 98°.6; pulse 80. Night disturbed. Abdomen distended with gas; relieved by an enema.

P.M.—Temperature 98°.6; pulse 75.

7th January, A.M.—Temperature 98°.6; pulse 74. Night not good from indigestion.

P.M.—Temperature 99°; pulse 88. Tincture of cascara given to-night.

8th January, A.M.—Temperature 98°.8; pulse 80. Poor night. Wound discharging freely; tube slipped out, the dressing having shifted.

P.M.—Temperature 98°.9; pulse 74. Again cascara.

9th January, A.M.—Temperature 98°.8; pulse 80. Cascara has had no effect; a large dose of powdered rhubarb to be given to-night.

P.M.—Temperature 98°.6; pulse 90.

10th January, A.M.—Temperature 98°.8, pulse 76. Copious movement after powdered rhubarb. Patient fatigued.

P.M.—Temperature 98°.8; pulse 94.

11th January, A.M.—Temperature 98°.6; pulse 74. One movement.

P.M.—Temperature 99°.4; pulse 84.

12th January, A.M.—Temperature 98°.8; pulse 81. Discharge very free. Tube changed. Spasmodic pains continued after changing dressing last night. Cascara.

P.M.—Temperature 99°.2; pulse 85.

13th January, A.M.—Temperature 98°.6; pulse 74. Fairly good night.

P.M.—Temperature 99°; pulse 79. Several motions after cascara.

14th January, A.M.—Temperature 99°; pulse 80. Colic after cascara hindered sound sleep.

P.M.—Temperature 99°.2; pulse 82.

15th January, A.M.—Temperature 98°.6; pulse 76. Passed a good night. Discharge free. Tube, which is now short, pushed out by the spasmodic contractions of abdominal wall.

P.M.—Temperature 99°.4; pulse 87. Patient's last meal is at 8 P.M., so that at 9 P.M. the pulse is higher, digestion being in progress.

16th January, A.M.—Temperature 99°.2; pulse 82. Owing to drainage being inefficient a longer tube had to be put in under chloroform.

P.M.—Temperature 99°.4; pulse 88.

17th January, A.M.—Temperature 99°; pulse 77. Night disturbed. Matter escaping freely. Cascara, early in the morning, produced one movement.

P.M.—Temperature 99°.9; pulse 88.

18th January, A.M.—Temperature 99°.2; pulse 84. Severe spasmodic contractions during the night felt around the tube. Sleep fair. Matter not coming freely, the tube was replaced, and, as usual, the cavity washed out with bichloride of mercury lotion.

P.M.—Temperature 99°.8; pulse 93. Appetite for some days past good. Two movements.

19th January, A.M.—Temperature 99°.4; pulse 83. Much discharge on dressing.

P.M.—Temperature 99°.4; pulse 93. Changing dressing much less painful for several days past.

20th January, A.M.—Temperature 99°; pulse 88. Night good. An air mattress, just procured, adds much to patient's comfort. The skin over the sacrum was beginning to get irritated. Strong adhesive plaster (two folds) answers exceedingly well in such a case when the skin is not broken.

P.M.—Temperature 99°.4; pulse 88.

21st January, A.M.—Temperature 98°.4; pulse 74. Night good. Cascara again.

P.M.—Temperature 99°.8; pulse 96. No movement; much gas in bowels. Dressing easily borne.

22nd January, A.M.—Temperature 98°.9; pulse 78. A good night. No movement. A large dose of cascara this morning. (Patient cannot swallow pills or take castor oil, and takes salts in the dry form.) Matter is still dark and sero-sanguineous.

P.M.—Temperature 99°.4; pulse 84. One difficult movement.

23rd January, A.M.—Temperature 98°.6; pulse 80. Several small movements during the night. No sleep, and patient fatigued accordingly.

P.M.—Temperature 99°.4; pulse 96. A free motion during the day. Appetite very good.

24th January, A.M.—Temperature 98°.7; pulse 84. Night fair. Two movements before daybreak.

P.M.—Temperature 100°; pulse 90. Patient has a light coryza.

25th January, A.M.—Temperature 98°.8; pulse 75. Passed a good night. One movement.

P.M.—Temperature 100°; pulse 90. A little bronchial catarrh.

26th January, A.M.—Temperature 98°.6; pulse 72. A good night. Matter now more distinctly purulent. Cascara this morning.

P.M.—Temperature 100°.3; pulse 96. Pain this afternoon in right hypochondrium; the bowels distended with flatus.

27th January, A.M.—Temperature 98°.8; pulse 78. Cascara again to-day. The cold runs its course, and there is still cough.

P.M.—Temperature 100°.4; pulse 88. Bowels not yet moved. Flatulence troublesome.

28th January, A.M.—Temperature 99°.5; pulse 80. A bad night. Severe pain in liver, to the right of the wound, which is increased by the flatulent condition. Three movements during the night, but no sleep.

P.M.—Temperature 100°.3; pulse 93. The day has been easier, though there is still pain.

29th January, A.M.—Temperature 99°.5; pulse 80. A good night's rest. 4 drachms of sulphate of magnesia early in the morning, followed by 2 drachms more at 2 P.M.

P.M.—Temperature 100°.6; pulse 100. No movement; an enema of glycerine to be given.

30th January, A.M.—Temperature 98°.4; pulse 74. Four large movements immediately after the glycerine; much gas escaped. Slept little. Ascending colon still distended.

P.M.—Temperature 100°.4; pulse 100.

31st January, A.M.—Temperature 98°.4; pulse 78. Bronchial catarrh troublesome all night. Gave a sedative mixture. Wound contracting quickly now.

P.M.—Temperature 99°.5; pulse 78. A glycerine enema brought away mucus only. The wound is slightly erythematous at upper part.

1st February, A.M.—Temperature 98°.6; pulse 76. Catarrh better. Slept five hours. Erythema round margin of wound less. Bowels distended and uncomfortable.

P.M.—Temperature 100°; pulse 90. Day fairly good. Discharge still profuse.

2nd February, A.M.—Temperature 99°.8; pulse 80. Night fairly good. Pain in neighbourhood of wound; erythematous blush still present. Took sulphate of magnesia early in the morning.

P.M.—Temperature 99°.6; pulse 94. No motion.

3rd February, A.M.—Temperature 98°.6; pulse 77. Had a good night.

P.M.—Temperature 99°.6; pulse 90. A second dose of sulphate of magnesia resulted in two movements and much gas. Patient's appetite is good, in spite of continued feverishness.

4th February, A.M.—Temperature 98°.4; pulse 80. A good night.

P.M.—Temperature 100°; pulse 96.

5th February, A.M.—Temperature 99°; pulse 80. No sleep, from pain in side and distension of bowels.

P.M.—Temperature 100°.4; pulse 92. Took sulphate of magnesia at 4 A.M., and had two liquid stools in forenoon.

6th February, A.M.—Temperature 99°.4; pulse 84. Night not good; very tired this morning.

P.M.—Temperature 101°; pulse 90. Pain all day over liver in mid-axillary line. 25 minims of nepenthe at bedtime.

7th February, A.M.—Temperature 100°.7; pulse 89. Pain in right hypochondrium all night, and a swelling externally at lower border of liver in mid-axillary line. *Pressure over this caused the rupture of a second abscess into the cavity of the old one*, and 2 ounces of pus escaped. A drainage tube was passed to the opening without difficulty, and the sac washed out.

P.M.—Temperature 100°.9; pulse 93. Patient slept a little during the day, and matter has been escaping freely.

8th February, A.M.—Temperature 99°.2; pulse 85. Patient had to take nepenthe at midnight to relieve spasmodic contractions of abdominal wall, which came on at three different times during the night. A little ulceration in progress at the lower edge of the wound, which is still erythematous.

9th February, A.M.—Temperature 98°.6; pulse 88. Slept little. Ulceration extending slightly. No result followed administration of glycerine enema.

P.M.—Temperature 99°.4; pulse 92. A good day. No movement.

10th February, A.M.—Temperature 98°.4; pulse 76. Passed a good night. Wound discharging freely.

P.M.—Temperature 98°.6; pulse 84. Powdered rhubarb at 6 P.M.

11th February, A.M.—Temperature 98°.4; pulse 75. Fair night. Still no motion.

P.M.—Temperature 98°.4; pulse 81. At 11 A.M. a glycerine enema produced a free movement. Ulceration at edge of wound less.

12th February, A.M.—Temperature 98°.4; pulse 72. Good night. Matter coming freely.

P.M.—Temperature 98°.4; pulse 78.

13th February, A.M.—Temperature 98°.6; pulse 68. A good night.

P.M.—Temperature 98°.8; pulse 72.

14th February, A.M.—Temperature 98°.6; pulse 68. Powdered rhubarb early this morning.

P.M.—Temperature 98°.6; pulse 86. A motion after midday.

15th February, A.M.—Temperature 98°.4; pulse 69. A good night.

P.M.—Temperature 98°.4; pulse 84. Day comfortable.

16th February, A.M.—Temperature 98°.4; pulse 68. A good night.

P.M.—Temperature 98°.7; pulse 76.

17th February, A.M.—Temperature 98°.4; pulse 69. Pressure over abscess expels about a teaspoonful of matter. PARKE, DAVIS, & Co.'s elixir of cascara, in small teaspoonful this morning, produced two movements in afternoon.

P.M.—Temperature 98°.4; pulse 81.

From the last entry the temperature has not risen above 98°.5, the patient has rapidly gained strength and a small teaspoonful of cascara elixir has ensured a daily motion. To-day (28th March) the wound is all but closed, and only a few drops of pus stain the dressing.

The diagnosis was doubtful for at least two weeks after the patient came under my care. The large doses of salicylate of soda may possibly have set up typhlitis, followed by localised inflammation of the liver. When first examined a certain amount of perihepatitis was present, but that seemed insufficient to account for the continued pain. The face did not indicate anything hepatic, nor was the conjunctiva stained, the greater part of the organ carrying on its functions, and there being no ducts of importance compressed. After the operation the spasms were very painful; they were produced by reflex contraction of the abdominal muscles compressing the liver: moving the drainage tube would at once bring them on.

The india-rubber drainage tubing was not so large as I should have liked, and there was no little trouble with it. In another case I shall certainly try metallic tubes, though it is doubtful whether, with the spasmodic contractions to which this patient was subject, a metallic tube could have been borne. After the operation the temperature fell, but did not become normal. The record is interesting as showing that abscess may be present with a very slight degree of fever. After the rupture of the second abscess, on 7th February, the normal was quickly regained. The pain also became less after the operation, but did not cease till after 7th February. The troublesome flatulence was partly due to a slight deficiency in bile and partly to the atonic state of the muscular walls of the intestines, which had existed before the patient became ill. He was not in the way of taking any exercise, and had suffered from constipation for years. The elixir of cascara of Messrs. PARKE, DAVIS, & Co. answered capitally, and seemed more reliable than the tincture previously used.

There were no deaths among foreigners during the period under review.

The number of Chinese attending the hospital for treatment was about the same as usual. There were for the year 5,475 patients, and of these over 1,000 in-door. Many of the

latter were admitted for some operation on the eyelids, and remained in for only a day or two. Influenza ran through the hospital, attacking both attendants and patients. It took the form of smart fever, with headache, etc., lasting four to seven days, and leaving the patient weak afterwards.

In October gangrenous erysipelas showed itself in an in-patient who had had amputation of the penis performed for epithelioma, and was about to leave. The disease showed itself in the left arm, and after a few days the patient succumbed.

A second case occurred four days after the first, in a patient suffering from callous ulcers of the leg, who was lying in another ward. Here the result was also bad.

All the patients were discharged at once, and the place was thoroughly cleaned, white-washed, and left empty for a month. Since then we have had no recurrence. It is difficult to prevent overcrowding at this season, so many coming whom treatment would much benefit.

Dr. E. A. ALDRIDGE'S REPORT ON THE HEALTH OF ICHANG

For the Half-year ended 31st March 1891.

The following abstract is from the meteorological observations taken at the Custom House, Ichang (latitude, 30° 14′ 25″ N.; longitude, 111° 18′ 34″ E.):—

Meteorological Table, October 1890 to March 1891.

Month.	Thermometer.				Barometer.		Rainfall.	
	Highest.	Lowest.	Average Highest.	Average Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
1890.	° F.	° F.	° F.	° F.	Inches.	Inches.		Inches.
October	91.0	49.2	79.0	56.9	30.32	29.93	1	0.23
November	76.8	39.8	68.5	50.4	30.44	29.85	4	1.21
December	61.0	27.2	53.7	43.0	30.56	29.71	9	1.68
1891.								
January	59.5	27.0	49.2	35.6	30.47	29.93	4	0.28
February	60.5	25.0	49.4	36.8	30.62	29.88	6	0.58
March	87.5	37.5	65.5	46.2	30.36	29.60	6	1.33

On analysing the above record it is found that the average temperature has been about 50° F., an extremely pleasant one for winter. This has been accompanied by an unusually dry season, the rainfall for the six months being only 5.31 inches, falling in 175 hours, making a total for the 12 months of 41.01 inches, which fell in 531 hours. The weather was mostly clear, fresh and bracing. The recession of the river left a beautiful, flat, sandy beach, about 300 yards broad and 2 miles long, allowing of good exercise without the necessity of having to meander among the thousands of tombs and paddy fields that are the immediate and uninviting surroundings of the city of Ichang. Many hard frosts were experienced; while the snow that fell melted almost at once on the ground, but was seen for days covering the tops of the mountains round. During the coldest days, even though the temperature could not be considered very low, the cold seemed most penetrating, and the amount of clothing one had to wear for comfort was astonishing.

Nasal and laryngeal catarrhs and rheumatism were frequent among foreigners, to which result the over-heating of the rooms by closed stoves—their houses not being provided with grates and fireplaces—no doubt contributed.

Fogs were absent, except on the river in the morning and evening.

Among foreigners there was one case of remittent fever, noticeable for the lengthy and intractable elevation of temperature, without any other serious symptoms. Recovery was most satisfactory.

A case of acute dysentery speedily yielded to treatment.

A middle-aged gentleman, of portly build, suffered from "lawn-tennis leg" on the first occasion of playing tennis for some time.

The characteristic sharp pain occurred, and his neighbour was at once accused of having struck him with a ball. There was great loss of power in the limb, and a painful, depressed spot was felt at the seat of rupture.

Two female children were born to foreigners.

A period of great mortality from malarial fevers among the native population lasted during the summer months, but came to an end in October.

There was an outbreak of whooping-cough in February, and several cases were attended. Pulmonary complications, from which death resulted in more than one instance, were more frequent than is generally noticed in that disease in China.

One case was followed by cancrum oris. The treatment was at once energetic, and fuming nitric acid was applied; but the child succumbed on the fourth day of the disease.

There was no return of the influenza, which, as recorded in my last Report,* was prevalent in Ichang during April of last year.

* Customs *Medical Reports*, xl, 5.

DR. A. SHARP DEANE'S REPORT ON THE HEALTH OF PAKHOI

For the Year ended 31st March 1891.

SINCE my last Report few cases of illness have to be recorded; the health, both of Chinese and foreigners, compares favourably with the previous 12 months. This may be accounted for in that there was a more even rainfall, and the temperature did not rise so high as during the preceding year, although the hot season was more protracted. Most rain fell at the proper season, not as in 1889, when the greater portion fell in August and September. In 1889, from 1st April to the end of July there was only 17.65 inches of rain, which, with a hot sun on light, sandy soil, almost amounts to a drought; during August, 30.23 inches, and from 1st September to the end of the year, 16.75 inches, were registered—making the total rainfall from 1st April to 31st December, 64.63 inches. Comparing these figures with those of 1890, the rainfall from 1st April to the 31st July was 38.05 inches; for August, 12.61 inches; and from 1st September to the 31st December, 6.66 inches—making for these nine months a total of 57.32 inches, against 64.63 inches during the same period in 1889. From this it will be seen that the rainfall for the nine months of 1889 exceeded the fall of the corresponding period of 1890 by 7.31 inches. But what is of the most vital importance to us here is not that the amount of rain in one year should be more or less than that of another, but that we should have an evenly distributed and sufficient quantity of rain between April and the end of July, as was the case in 1890, when rain fell during these four months to the extent of 38.05 inches, against 17.65 inches during the corresponding months of 1889.

EPIDEMICS.

A mild epidemic was experienced here during May. It lasted about three weeks, and affected Chinese exclusively. Out of a large number I saw 20 cases only, two of which were under my care. The symptoms and course of the disease were stated to be the same in all as in these two cases, namely:—

An intense feeling of malaise, followed by rigor; pain in the back, like that experienced at the commencement of small-pox, increasing in severity; very foul tongue; suffusion of the conjunctivæ; dryness of the inside of the nose; high fever; racking frontal, temporal and occipital headache, the pain extending down the back of the neck; general muscular pains; scanty excretion of urine; constipation; great restlessness and loss of sleep. The climax of the affection was reached about the fifth or sixth day. As a rule, after the seventh day the symptoms gradually subsided, leaving the sufferers very weak, and some of them with a bad cough (bronchitis?).

The mortality in this epidemic was small; I heard of but four deaths, and these were said to have been due to lung complications.

The temperature of the two cases above referred to began to rise from the first onset of the disease, and during its course, on about the fifth day, reached 103° in one case and 104°.5 in the other. Beyond a dose of compound powder of jalap with calomel, as a purge, no other medicine was given until convalescence was established, and then a tonic was prescribed. Both cases were in their usual health within a month from the commencement of the attack.

Bubonic plague, mentioned in my last Report as having broken out at Lungchow,* disappeared in April, after a heavy fall of rain. No cases occurred at this port during the year.

The Chinese are of opinion that bubonic plague emanates from the ground, and is favoured by a long continuance of dry weather, when the earth becomes porous and numerous fissures appear on the surface, facilitating the escape of whatever causes the disease. Heavy rain, they say, prevents the occurrence of plague; or if it is already among them, a downpour of two or three days' duration will cause it to cease.

Dysentery.

Among foreigners, at the end of October one case of dysentery was treated, which, however, I do not consider was of local origin, as the symptoms appeared in the patient, who was not feeling well previous to landing, only a few days after arrival from a Yangtze port. A very similar case occurred here some years ago in a patient who had resided on the Yangtze for some years, and who, almost immediately on arrival, developed symptoms of dysentery.

In the following table the temperature is taken according to the rules laid down at the Hongkong Observatory:—

Meteorological Table, April 1890 to March 1891. (Latitude, 21° 29′ N.; longitude, 109° 6′ E.)

Month.	Thermometer.			Rainfall.	Month.	Thermometer.			Rainfall.
	Highest.	Lowest.	Mean.			Highest.	Lowest.	Mean.	
1890.	° F.	° F.	° F.	Inches.	1890.	° F.	° F.	° F.	Inches.
April	91	59	79.0	4.57	November	82	55	67.5	0.70
May	96	67	84.0	9.48	December	81	52	68.0	2.36
June	95	75	84.5	10.81	1891.				
July	93	72	88.0	13.19	January	79	51	67.0	2.08
August	93	71	89.0	12.61	February	80	42	58.0	2.69
September	92	62	74.0	3.20	March	85	52	63.5	2.62
October	90	63	75.5	0.40					

* Customs *Medical Reports*, xxxviii and xxxix, 15.

Dr. W. WYKEHAM MYERS'S REPORT ON THE HEALTH OF TAINAN

For the Two Years ended 31st March 1891.

The topographical and climatic attributes of this port having been fully described in previous Reports, it is very difficult, in view of the extremely small community settled here, to find material for other than a bare repetition of nosological details which neither from a professional nor a general point of view would seem to be of sufficient interest to warrant more than the recital which has already been amply given.

During the period under review but one death has taken place, and that was from advanced pulmonary and laryngeal phthisis.

The patient was sent here in a very desperate condition, necessarily more with the hope of alleviating his suffering than from any prospect of permanent recovery. As always happens, however, the further deposit of tubercle was arrested almost from the time of his arrival, and, to the surprise of everyone, not even excepting himself, life was prolonged for three years, and passed in a state of comfort that contrasted most favourably with his condition before coming to Tainan. Though specific bacilli were never absent from the sputum, still their numbers began to diminish from an early date, and towards the last were reduced very considerably.

I have already and repeatedly pointed out this peculiar and beneficial local effect on tubercular disease, and can only reiterate my firm conviction that were this fact more generally known, consumptives would gladly come here, if only for the relief from distressing symptoms which is so surely afforded by residence within this area.

We have not observed in South Formosa any phenomenal climatic change within the past two years, and I am therefore unable to supply the information called for under this heading.

We have been singularly free from all epidemics, and, as far as I know, no cases of influenza have been met with.

There have been three births during the time reported on, none of which, however, call for any further notice.

Residence at Anping having of late years become much more common than it used to be, cases of pernicious malarial infection are necessarily of more frequent occurrence than formerly; but a run to Takow or elsewhere generally modifies or does away with permanent bad effects, even from this cause, and I am happy to say that the health of the community, as a whole, has been very good.

There have been two cases of insolation. In one the sequent debility and general nervous symptoms were so protracted that the patient had to leave the island for three months on a trip to Japan. Though not quite up to his previous form, he has returned very much improved, and will, no doubt, soon be quite well again.

DR. W. A. HENDERSON'S REPORT ON THE HEALTH OF CHEFOO

For the Half-year ended 31st March 1891.

DURING the cold season Chefoo has but little relationship to pathology. Dry, bracing atmosphere, blue skies, a powerful sun that from 11 A.M. to 3 P.M. melts the skater's ice, just enough frost to prevent rain, are not the conditions favourable to the development of infectious disease. Yet the foreign Settlement, being situated on the fringe of a large native population, is liable to all the epidemics which visit the latter. Hence, for the last two winters foreigners have suffered from the influenza which has been prevalent among the natives. Last winter it appeared in November, and continued till January, the larger number of cases occurring in January. Few houses were left unvisited.

The character of the complaint was much the same as in Europe: generally, three days' fever, accompanied and followed by great prostration and by derangement of the respiratory and intestinal tracts. When due care was not taken, relapse occurred. In one case it was very severe; soon, pulmonary abscess became manifest. Boracic acid (10 grains three times daily) was administered, and in less than a week evacuation was complete, and the discharge, which had been copious and characteristic of sphacelus, ceased.

While influenza has attacked one or two individuals in most households, I have found that another form of epidemic poison had infected every person that I have examined, with the exception of one. This affection took the form of herpetic tonsillitis, which, according to Dr. SQUIRE,* is regarded by TROUSSEAU as a form of sporadic influenza. My first case occurred on the 24th November, and presented the following symptoms:—

The maximum afternoon temperature for the first week was from 102° to 103°; second week, from 101° to 102°; third week, from 100° to 101°; fourth week, 100°—there being in all a month's fever. The fall in the morning was from 1° to 1½°. On the first day of fever there was headache and sore throat, after which no pain in either region; very irritating cough during first 10 days; further, no discomfort. From the first the pharynx generally, but the soft palate especially, was studded with large herpetic vesicles; while the fever subsided the throat persisted.

On 31st March the patient was in the same condition of throat. The soft palate was then thickly studded with vesicles, and from each vesicle proceeded a dilated vein. On the tonsils and posterior wall of the pharynx, which were formerly covered by a crop of vesicles, there were continuous patches of congestion, denuded of their epithelium.

The appearance is similar, as far as those regions are concerned, to the case of sprue described by Dr. THIN.† In fact, I have at present a case of sprue, contracted in the south, the pharyngeal aspect of which is identical with some of the cases of herpes tonsillitis in Chefoo.

In the middle of February some children were attacked by the complaint.

* *Lancet*, 16th August 1890. † *British Medical Journal*, 14th June 1890.

One child had a week's fever; before she had recovered, another had it for two days. When they recovered from the fever the youngest got it, and for a fortnight had a nightly rise of temperature, which was normal during the day. All the throats were similarly affected, but in a less degree than in the father. The eldest boy then had the throat symptoms, but no fever.

A similar outbreak occurred in another household, and I then thought of the milk. Upon the udders of three cows I found vesicles. The dairyman declared that such vesicles were not uncommon during the first two months after calving; so frequent were they, he said, that the term of duration had never been watched. Four days afterwards I found that the vesicles had dried up.

I then made a visitation among the residents, and found that no throat had escaped, as mentioned. None, however, had the eruption so extensively as the first case. In this the vesicles were of the largest size of herpetic vesicle. In some they were very minute, and limited to small patches on the anterior pillars of the fauces. Between these two extremes were all degrees of development; frequently the whole of the soft palate was involved. In one family of six children two had two days' fever, the mother had one day of fever, with stiff neck. In two other families a similar proportion had fever; but as a rule there is no fever, and seldom local discomfort.

Dr. DOUTHWAITE had one boy patient with a week's fever, the afternoon temperature reaching 105°, and, besides the inflamed throat, the chest was overspread with erythema, and a few petechiæ on the wrists.

A number of Chinese examined had also the throat trouble. In a few there was high fever, with great prostration, but no deaths have been heard of.

This affection is not limited to Chefoo. Five patients from Mid-China lately consulted me for other troubles, but each, unknown to himself, had the throat eruption, there being no accompanying discomfort. These facts indicate the widespread character of the epidemic. It is interesting to notice that Surgeon D. M. MOIR, in his paper on Malaria and Influenza,* enumerates congestion of tonsils and fauces among characteristic symptoms, but makes no mention of herpes.

The duration of this affection will be interesting to observe, as it shows no signs of waning, and, according to Dr. STEPHEN MACKENZIE, it is not a condition to be lightly regarded, as he has known it to lead to œdema of the glottis.

* *Indian Medical Gazette*, December 1890.

DR. ALEXANDER JAMIESON'S REPORT ON THE HEALTH OF SHANGHAI

For the Two Years ended 31st March 1891.

IT will be interesting to take a general view of the meteorological conditions during the period to be reported on before considering the nature and incidence of the diseases which prevailed.

The summer months of 1889, with the exception of May, were unusually tempestuous, the typhoon record for the year having been especially disastrous. The greater number of the storms which visited Shanghai were preceded by intense heat, and were accompanied or followed by a fall of temperature, which in no case lasted for any marked length of time. The most violent of these storms occurred on the 18th June and 3rd July, at both of which periods the heat was suffocating. June, July, August and the first half of September were, on the whole, dry, in spite of several torrents of rain of comparatively short duration. April and May were damp throughout. In the middle of September a wet season of six weeks set in, which lasted to the close of October, and was particularly exhausting, inasmuch as the mean temperature continued at a high figure. The nights in July, August and the earlier part of September were very hot, the thermometer commonly registering from 75° to 82° at midnight. It might almost be said that summer began in the latter part of April, when the maximum daily temperature oscillated round 85°. The first three weeks of May were cool; in the last week, however, the temperature rose again to the neighbourhood of 80°. All June was unusually hot, the maximum for the month (93°) being reached on the 28th. The first fortnight and the last week of July were remarkably hot. The maximum for July (7th) was 98° (this was the hottest day of the year); the night minimum (14th) was 70°; the mean for the month was 83°. August was divided into groups of two, three or four days of intense heat with intervals of moderate temperature; the highest temperature was 95° (15th), and the night minimum was 65° (29th); the mean for the month was 81°. With September autumn began. On the 1st, 91° was registered, but the mean for the month fell to 72°, while the nights became perfectly tolerable; the night minimum (29th) was 56°.

It will thus be seen that the summer of 1889 was eminently unfavourable to health, on account of its frequent tempests, its sustained high temperature (which, however, on no occasion reached 100°), but above all on account of the intolerable heat of its nights.

The winter which succeeded this summer of exceptional heat was remarkable for its mildness. There were very few storms; those alone which are worth mentioning occurred on the 20th October and 12th December 1889, the 27th January and 23rd March 1890.

The most interesting occurrence during the winter, from a meteorological point of view, was a severe shock of earthquake, which disturbed the Settlements about $2^{h.}$ $15^{m.}$ A.M. on the 28th December. The undulation lasted for about a quarter of an hour, and was accompanied by a curious subterranean noise. Many people were seriously frightened, but a great number slept peacefully through the shaking. No damage of any kind was done. There was continuous heavy rain throughout October, completing an autumn wet season of six or seven weeks' duration. The temperature was extremely variable through October and November; the maximum

for the former month was 83° (20th), the minimum, 39° (30th). Winter may be said to have begun in November. The maximum of 73° was registered on the 8th, and the minimum of 29° on the 14th. Except during the last week, hardly any rain fell, and this relative prevalence of dry weather lasted throughout the winter. Thus there was hardly any rain in December; in January 1890 only a few showery days in the latter half of the month; three wet days and a few showery ones in February; and four wet days, besides a few showers, in March. The absence of rain does not imply that the air was dry; on the contrary, the unusually high mean temperature through the season kept a very large quantity of watery vapour in suspension. December was mild to the 11th, when, on the 12th, there was a sudden fall to 34°. The maximum temperature (51°) was registered on the 11th, the minimum (23°) on the 13th. The maxima for January (11th), February (14th) and March (18th) were, respectively, 60°, 68° and 63°. The corresponding minima were, for January (6th), 26°; February (11th), 30°; and March (5th), 27°. These figures, however, give only an imperfect idea of the prevailing temperature of the season, which can be more accurately estimated from the facts that in January and March the mercury never fell to freezing-point between 9 A.M. and 9 P.M., and that in February 32° and below were registered on only five days, while the mercury never touched freezing-point between 9 A.M. and midnight. Freezing-point was not reached after the 13th March.

After the exceptionally mild winter just described, the weather throughout the summer of 1890 was unusually calm. A severe storm occurred on the 24th April; on the 14th and 17th July strong winds at Shanghai indicated the neighbourhood of typhoons on the coast; and September was boisterous without any distinct storm. May, June and August were perfectly calm. A very slight shock of earthquake was registered at Zikawei during the morning of the 3rd June, but little notice, if any, was taken of it in the Settlements. The season presented nothing unusual as regards rainfall. April was showery throughout, with short heavy downpours on the 21st and 24th. May began and ended with rain, but the intermediate four weeks were, except for a few momentary showers, perfectly dry. June was rainy from beginning to end, with heavy downfalls on the 9th, 17th and 18th. A like description applies to July and August, two days' heavy rain occurring in each month. After the 3rd, September was perfectly dry. But whatever has to be said about health as influenced by meteorological conditions, the impression of comfort or discomfort left by a Shanghai summer depends far more upon the prevailing temperature, and especially upon the night temperature, than upon anything else. April, May and June were very variable as regards heat. A few hot days occurred in each month, but during the first half of June there were some days which were almost wintry. The maximum temperature registered in April was 84° (19th); in May, 90° (19th); in June, 97° (30th). The corresponding minima were, for April, 38° (5th); for May, 48° (5th); and for June, 60° (2nd and 3rd). July was a month of suffocating nights, the temperature after midnight oscillating about 81°. The maximum (97°) was reached on the 1st, the minimum (72°) on the 30th. August, though very hot, was much more tolerable, the night temperature never having exceeded 82°, which it reached only once; the maximum for the month was 95° (18th), the minimum, 66° (31st). September was mild; a few very cold days in the last week seemed to promise an early autumn, but the month closed in the midst of unusual heat; the maximum temperature recorded was 87° (30th), the minimum, 53° (25th).

The autumn of 1890 began in the last week of October. Strong winds prevailed from December 1890 to March 1891, October and November having been calm, with the exception of two heavy blows on the 11th and 29th November. There were, however, no great atmospheric disturbances, except on the 26th February, which was marked by two violent thunderstorms. The winter was unusually dry. Hardly any rain fell in October and November; December, January and March were showery, with but slight rainfall; and February would have been classed as dry but for heavy falls of rain on the 4th, 26th and 27th. Cold weather did not set in until the 31st December. The first frost of the season occurred on the 13th November, and was the only frost for that month. In December there were only four days (14th, 16th, 30th and 31st) on which the mercury fell to freezing-point. January 1891 was very variable as to temperature, but was, on the whole, mild until the 31st, when the maximum reached was 31°.5, the minimum being 29°. February was mild; there was no frost after the 20th. In March frost was registered on four days only; the weather was, however, cold to the 25th, when spring began. For October 1890 the maximum was 80° (1st), the minimum, 39° (27th); for November, maximum, 73° (28th), minimum, 30° (13th); for December, maximum, 66° (27th), minimum, 23° (31st); for January 1891, maximum, 63° (29th), minimum, 19° (16th—this was the coldest day of the season); for February, maximum, 72° (22nd), minimum, 22° (12th); for March, maximum, 79° (31st), minimum, 29° (11th).

During the summer months of 1889 the mortality among foreigners was singularly low. Cholera appeared early, caused one death in June, and then practically passed out of sight. The information that can be gathered about disease among natives is always vague and unreliable, and false in detail. But it was at least possible to ascertain that no fatal epidemic visited Shanghai or its neighbourhood, characterised by the more prominent symptoms of cholera. And although diarrhœa was prevalent among foreigners, as, in fact, it always is in late spring and summer, there was little or none of the "choleraic diarrhœa" which is separated only in degree from genuine cholera, and which usually, if not always, precedes and accompanies an epidemic of the latter. It may therefore be fairly a matter of doubt whether true cholera was really lighted up or not. I say "lighted up," and not "introduced" or "imported," for there can be no doubt that we are now, and probably have been for many years, quite competent to manufacture our own cholera. Supposing that the disease is dependent on the activity of special germs, the mode of preservation of those germs from one period of cholera prevalence to the next is a question not only of great interest theoretically, but of vast importance practically. We may attribute extraordinary tenacity of life to them, and assume that their functions are held in complete abeyance by the absence of certain unknown conditions, meteorological or other; or we may as reasonably, perhaps more reasonably, hold that when once domiciled and acclimatised in a locality they are always more or less active, so far as reproduction is concerned, but at the same time susceptible of such temporary modifications in correspondence with their environment as for the time being modify their virulence and restrain the complete exhibition of their powers. Under this latter supposition many diarrhœas, classed as simple and running a favourable course, may be cholera in disguise. It is certain, however, that no attempt to exterminate cholera germs or any other germs can possibly succeed except by accident, and that such accident is extremely unlikely to occur. Hence the only directions in which efforts to arrest

or limit epidemic or endemic disease have any chance of being successful are two, namely, (1) investigation of the biology, physiology and pathology of specific germs themselves, which, if thoroughly carried out, may reveal the conditions most unfavourable to their life or special activity, or most favourable to their modification and retention in a modified and more or less harmless form; and (2) practical application of the law arrived at empirically thousands of years ago—that free access of light, rapid and thorough circulation of air, scrupulous cleanliness, attention to general health, and, in a word, all that is included in the expression "hygiene of the body and environment," produce a condition of things eminently unfavourable to the development of virulence in the, by supposition, ever-present elements of contagious diseases.

Dysentery and diarrhœa were neither severe nor widespread. On the other hand, the eruptive fevers occupied a very important place in the morbidity of the foreign community. There was an epidemic of measles. Nine or ten cases of scarlet fever are known to have occurred, with two deaths. Small-pox, without being of unusual prevalence or severity, was present far on into summer, causing a death in July, and many cases of varicella were observed among children. Along with this group of eruptive fevers I place, for reasons which will immediately be obvious, the various forms of "sore throat." For many years after the foreign Settlements of Shanghai had assumed, with respect to family life, the appearance and dimensions of a small European city, we were almost entirely free from the presence of the eruptive fevers, with the exception of small-pox, which is not an infantile malady. When there were no children, or very few, there was naturally no prevalence of infantile diseases, and even after children multiplied some time was required before these diseases established themselves. But their establishment was necessarily only a question of time, for in the first place, although even now we know hardly anything about the nature and prevalence of disease at any given time among the natives, we have always had indications that none of the forms of eruptive fever, including diphtheria, are absent from among them. This being so, it was clear, in the next place, that the unrestricted communication between native families of the lowest class and foreign families by means of servants, the rapid closing in of native dwellings round and between foreign houses, the dense overcrowding of the former, their unimaginable filth, the lack of any knowledge or any care on the part of natives with regard to the isolation of cases of contagious disease or the removal of the dead, must in time make foreigners sharers in every form of malady which at any given period might visit the natives epidemically. To enforce this *à priori*, but perfectly unassailable, reasoning, two circumstances brought their support. One was the occasional but rare occurrence of cases of eruptive fever: measles at first, soon with its invariable concomitant of whooping-cough, which speedily became endemic; then varicella, which, in forms of greater or less severity, is now seldom absent; parotitis and scarlet fever, which have as yet hardly acquired rights of citizenship, but soon will; and lastly, but very rarely, true diphtheria. The second, the importance of which has not yet been proved, is the rapidly increasing frequency of throat affections: catarrhal tonsillitis and pharyngitis, follicular tonsillitis, ulcerative tonsillitis, the peculiarity of these affections lying in this—that they are oftener than they ought to be accompanied by swelling and tenderness of the cervical glands, by apparently disproportionate febrile reaction, by ill-defined eruptions on the skin, and by a marked tendency to exudation. This exudation may frequently be completely removed in small fragments by gentle swabbing, leaving the mucous membrane beneath

Simultaneously with measles, rötheln and whooping-cough made their appearance, according to the general rule. Rötheln occurred with great frequency in February, characterised by an invasion period of general malaise and sore throat, followed by patches of roseolar eruption, slight coryza and lachrymation, and finely furfuraceous or altogether invisible desquamation. The temperature in these cases is almost always, if not always, high out of all proportion to the importance of the disease, 105° F. being commonly enough observed in very young children.

The supervision exerted by the Municipal Councils over butchers, milk-sellers, dairy-keepers and publicans is no doubt productive of much good to foreigners; but the belief, if it exists, that any precautions taken by a public body so limited in its powers as is the Municipal Council can "render the occurrence of cholera or any other disease in an epidemic form almost impossible" is a pure delusion. We cannot protect the Chinese against themselves; the most we can do is, by personal and domestic care, to protect ourselves against them. Powers to compel notification of contagious disease and of death, to enforce disinfection, and to prevent overcrowding in native tenements are all wanting, and, until they are obtained, efforts to secure hygienic conditions among the Chinese in our midst must remain largely fruitless. Meanwhile a good deal of money is being annually wasted on "disinfectants," which, in the quantities used, do not disinfect, but are simply deodorants. Careful scavenging and the liberal use of water under pressure, and of lime, are the only effectual and non-destructive measures which can be applied on a large scale to the disinfection (which is really only the cleaning under a more thorough and elaborate form) of native houses, courts and alley-ways. One great advantage of the acquisition of the waterworks by the Council would be the possibility of preventing the use of the river and creeks as sources of native water supply. No doubt year by year more and more pipe water is used by the Chinese; but there is still, at any given moment, an immense store of river and creek water in *kang* in native houses and yards, nominally undergoing the alum-precipitation process, but really, in addition, taking up inert and dangerous impurities, besides, in all probability, maturing the organic impurities which it contained when drawn. It is a mistake to believe that a Chinaman drinks nothing but tea or boiled water. To say nothing of the great consumption of ices by natives in summer, or of the quantity of pond ice eaten, a thirsty Chinese, who cannot at the moment provide himself with tea, and finds reasonably clean water under his hand, will drink the water without once thinking about its intimate purity.

How important the supervision of native taverns is may be judged from the following extract from the *North-China Daily News* of the 12th February 1890. This case was, happily, detected, but there can be no doubt that it is representative of a large number which escape notice, and which would, if discovered, explain many of the obscure affections for which foreign sailors are brought under medical observation.

> At the Mixed Court, on the 8th February, the keeper of a native tavern was fined $10 for selling foreign liquor—gin—to a sailor. The gin was so strong that when a drop of it was put on a brass dollar, the coin turned green. The stuff was sold at the rate of 30 cash for a glass about half the size of an ordinary tumbler.

This casts into the shade the "Hongkew gin" which, many years ago, I announced as an excellent liniment for ponies suffering from strains, and about which I was subjected to much good-natured ridicule in the newspapers and elsewhere.

Among the diseases of the summer months of 1890 cholera was predominant, its visitation, so far as foreigners were concerned, being almost exactly limited to August and September. Already, however, in July many cases of cholera and of severe choleraic diarrhœa had been admitted to the hospitals for Chinese, and the native employés of St. Luke's Hospital reported at that time that the mortality among the natives was excessive, cases of sudden collapse, with or without vomiting and diarrhœa, occurring with frequency in every quarter of the Settlements. The first death registered from this cause occurred on the 2nd August, the last on the 29th September. 18 cases were fatal among residents and 14 among non-residents. The degree of fatality of the disease may be judged from the fact that out of 27 cases admitted to the General Hospital 17 died, the per-centage (62.96) being below the average in Shanghai. During the prevalence of cholera here the disease raged like a pestilence in Japan. As usual during a season in which cholera is widespread, affections of the bowels of every degree of severity came under observation with great frequency. Diarrhœa was exceedingly prevalent in August, both the simple form and one of so much severity that it might be qualified as choleraic. Many cases of dysentery likewise occurred, and, in my experience, were unusually obstinate. Few will now be found to deny that genuine cholera is a disease of specific character, breeding true from a specific germ, although all the symptoms, whether taken singly or grouped in any imaginable fashion, may be found in other affections having no relation whatsoever to cholera. It may, of course, be assumed that the causes of these affections have the power of exerting such a modifying influence on certain bacterial forms always present in the intestinal tract, and generally innocuous, as to transform them into organisms identical with, or closely allied in properties and functions to, those which produce the toxine or toxines of cholera. No direct observations have, however, been recorded in support of any such theory, which, if it were proved, would cast a very important light on a region of pathology which is at present plunged in darkness. It is, at any rate, certain that when cholera flourishes it does so not only in consequence of a possibly enhanced virulence of its germ, acquired in virtue of hitherto unknown conditions, but also in consequence of an epidemic constitution, likewise depending on unknown conditions, but manifesting itself by a previous and contemporaneous prevalence of catarrhal bowel affections. Here, too, it may be said that these affections are, for a great part, cholera in disguise, and there exist, in fact, observations to support this view. But there remains a remnant which cannot be so explained, but which becomes intelligible on the assumption of some conditions, meteorological or other, specially favourable to the development of all the causes productive of intestinal fluxes.

During this cholera season the type of disease showed some deviation from the usual standard. Thus, for example, there were cases which, after apparent convalescence, terminated fatally from suppression of urine. Of these, while none, so far as I know, were absolutely sudden, some were extremely rapid when once suppression occurred. Others assumed a more chronic form, lasting from three to ten days, with uræmic symptoms. There was at least one case in which fatal dysentery swiftly supervened on cholera, and more than one marked by cerebral symptoms with violent delirium.

Apart from phthisis (three cases), only one death occurred from disease of the chest. Pulmonary affections were, in fact, infrequent and mild during this summer. There was, however, the same prevalence of sore throats of all kinds and degrees, which has been so often noted.

Of the fevers, typhoid and malarial fevers were remarkably infrequent. Simple catarrhal fever, or "influenza," was of common occurrence, but as no death was attributed to it, it may be assumed that the affection is not very formidable. Its peculiarity appears to lie in the nervous prostration it induces, which is out of all proportion to the degree of fever or to the severity of the muscular pains and bronchitis which, apart from the prostration, are the only important symptoms. Measles and whooping-cough occurred, but with no great frequency, among children. There were many cases of varicella, and small-pox caused two deaths in April 1890, one occurring in the person of a resident.

The following table completes the statistics of deaths up to the 31st December 1890:—

DEATHS of FOREIGNERS during the Year 1890.

CAUSE OF DEATH.	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.	TOTAL.
Small-pox	...	...	1†	1 1†	...	...	...	...	...	1*	...	...	4
Typhus fever	...	...	...	...	...	...	1†	...	...	...	...	...	1
"Fever" and enteric fever	1 1†	...	...	...	...	...	...	1†	1	...	1	...	5
Malarial fever	...	...	...	...	1*	...	...	...	...	...	1†	...	2
Cholera	...	...	...	...	...	...	...	10 8* 6†	6 4*	...	...	...	34
Influenza	...	...	...	...	...	...	...	...	...	...	1†	...	1
Diphtheria	...	...	..	...	...	...	1†	...	...	...	...	1†	2
Syphilis	...	...	...	...	...	...	1	1*	...	...	...	...	2
Cancer	...	...	...	...	...	...	...	2	...	1	...	...	3
Diabetes	...	...	...	...	...	1	...	...	...	...	...	...	1
Bright's disease	1	...	1	...	1	...	...	...	...	...	...	...	3
Phthisis	2	...	1	...	1	...	...	1*	...	...	1	1	7
Tubercular enteritis	...	...	...	1*	...	...	...	...	...	...	...	...	1
Meningitis	1†	...	...	...	...	...	...	1*	1†	1	1†	...	5
Convulsions	...	...	1†	...	...	...	...	...	...	...	...	...	1
Cerebro-spinal sclerosis	1	...	...	...	...	...	...	...	...	...	...	...	1
General paralysis	...	...	...	...	...	...	...	...	1	...	...	...	1
Heat apoplexy	...	...	...	...	...	...	1	1†	...	...	...	...	2
Apoplexy	...	...	1*	...	...	...	...	...	...	...	1	...	2
Hemiplegia	...	1*	...	...	...	...	...	...	...	...	...	...	1
Locomotor ataxy	...	...	...	...	...	...	...	...	...	1	...	...	1
Disease of the heart	...	...	...	1†	...	...	...	...	...	1	...	...	2
Heart failure and syncope	...	...	1*	...	...	...	1	...	1†	...	1	...	4
Aneurism	...	1*	...	...	...	...	...	1	...	...	...	...	2
Bronchitis	...	...	...	...	...	...	...	1	...	...	...	1*	2
Pulmonary embolism	...	...	...	...	...	1	...	...	...	...	...	...	1
Peritonitis	...	...	...	...	...	1	...	...	...	...	1	...	2
Intestinal obstruction	...	...	...	1	...	...	...	...	...	...	...	...	1
Enteritis and gastro-enteritis	...	...	...	...	...	...	...	1 1†	...	...	...	...	2
Diarrhœa	...	...	...	1	...	...	...	...	...	...	...	...	1
Dysentery	...	...	...	...	...	...	...	2 1*	1	...	...	...	4
Cirrhosis of the liver	...	...	...	...	...	...	...	1*	...	...	...	...	1
Abscess of the liver	...	...	...	1	...	1	...	...	1*	...	...	...	3
Icterus neonatorum	...	...	...	...	...	...	...	1†	...	...	...	...	1
Sclerema	...	...	...	...	...	1†	...	...	...	...	...	...	1
Injuries	...	2*	...	...	1†	...	...	...	...	...	...	...	3
Drowned	...	...	...	...	...	1*	1 2*	...	...	1*	...	...	5
Not certified	1	...	...	...	1 1†	...	1†	1*	...	1*	1 1*	...	8
TOTAL	8	4	6	7	6	6	9	41	16	7	10	3	123

* Not resident (35). † Children (28).

There was no fatal case of cholera in the winter season 1890–91. Why the disease should have been suddenly arrested at the end of September is a question to which no answer is at present ready. The weather did not become cold until the last week of October, which month, although extremely dry, was no drier than September. September, it is true, was very stormy throughout, while October was remarkably free from atmospheric disturbances, and this was the only difference which existed between the two months in respect of the more obvious meteorological conditions. Diarrhœa, dysentery and dysenteric diarrhœa were observed, but exhibited no severity, only one death being registered during the half-year from these affections. On the other hand, there was a very wide prevalence of bronchitis, and several cases of pneumonia (three fatal) were under treatment. Roughly, it may be said that there is a sort of equilibrium established in any given season between affections of the respiratory and those of the intestinal tract. When either group enters into activity, the other is more or less in abeyance. Tonsillitis of varying degrees of severity was always well in evidence, and several cases of parotitis occurred, especially in January, though there was nothing that could be qualified as an epidemic of mumps.

Two cases of severe sun malaise came under my notice at the end of March 1891, when, although the temperature was by no means excessive, the direct impact of the sun's rays was, as is often the case even in December, especially trying. When such instances occur there is probably some associated atmospheric state or some widespread, though probably trivial, epidemic constitution which, if known, would explain the difference which exists between the effects of exposure to the sun at different times under conditions of elevation, temperature and clearness of the air which are apparently identical.

The eruptive fevers prevailed throughout the six months. Small-pox caused three deaths—one in October 1890, two in January and one in February 1891,—and several cases of the disease among residents and non-residents were treated in hospital or elsewhere.

Two cases occurred among the members of the out-door staff of the Customs in February. Both patients had been searching native baggage a few days before they fell ill. Both bore good vaccination marks, and both recovered.

Measles is now seldom absent from the Settlements. Many children suffered from it or from varicella, which, though frequent, was not epidemic, during the latter half of the season. Catarrhal fever was likewise very prevalent. Typhoid fell lightly, only one case having proved fatal among residents and one among non-residents. On the other hand, malarial fevers were constantly present, and it again happened that a few cases of the unusual quartan form came under my care. No doubt I had not the monopoly of them.

In October I observed a curious form of fever which puzzled me then, and puzzles me still. In my practice it occurred in only two families, living in the same house and presumably under the same conditions as regards contact with the Chinese; they may therefore be considered as forming one group. I saw, however, two Chinese families through which the disease was running, and I was informed that a multitude of natives were affected in the same way.

The onset of the affection was in all cases sudden, with violent headache and vomiting, quickly followed by a scarlet suffusion, without definite spots, of the whole skin, and invincible drowsiness. In one of the two families referred to the mother was first attacked—18th October,—one child on the 19th,

two children on the 20th, one child on the 21st, one child and two amahs on the 22nd. The father thought himself threatened, but saturated himself with quinine, and suffered only from headache and vomiting. The mucous membranes were not affected, but in all the cases there was a profuse flow of limpid urine during the entire illness. After 48 hours, eruption and fever disappeared, and then cough with slight sore throat supervened. The highest temperature registered was 103°.2 in adults, and 105°.4 in children.

At the same time I observed, chiefly among children, a great number of cases of two-days' fever, apparently very contagious, accompanied by tonsillitis, pharyngitis and cough. This was generally dignified with the name of influenza, but bore no resemblance to that disease. The fever rose to 104° or 105°, but there was no rash. Let alone, or treated with quinine or anything else, the fever fell after 48 hours, and convalescence was rapid. Seeing it at first among children only, I was inclined to attribute it to errors of diet, but this was a mistake.

The two affections thus briefly described were evidently closely allied forms of some single malady.

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INSPECTOR GENERAL'S CIRCULAR No. 19 OF 1870.

INSPECTORATE GENERAL OF CUSTOMS,

PEKING, 31st *December* 1870.

SIR,

1.—IT has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to { Season. / Alteration in local conditions—such as drainage, etc. / Alteration in climatic conditions. }

e.—Peculiar diseases; especially leprosy.

f.—Epidemics { Absence or presence. / Causes. / Course and treatment. / Fatality. }

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking. I have committed to Dr. ALEX. JAMIESON, of Shanghai, the charge of arranging the Reports for publication, so that they may be made available in a convenient form.

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For everything enclosed within square brackets [ ], the compiler is responsible.

DR. GEORGE R. UNDERWOOD'S REPORT ON THE HEALTH OF KIUKIANG

For the Half-year ended 30th September 1891.

WHILE there have been several fatal cases, there has not been more than the ordinary amount of sickness in the Concession during the past six months.

One foreigner, who for years had been accustomed to smoke opium to a moderate degree, died from chronic albuminuria, with lung and heart complications. He had been the subject of enthetic disease, had not always been temperate, and had frequently suffered from acid dyspepsia; so that the influence of the opium habit in directly causing the albuminuria cannot be determined.

A second patient, an elderly primipara, died as the result of septic poisoning on the seventeenth day after parturition. The symptoms first showed in a mild form on the fourth day, and on the sixteenth, when—the fever having all but gone and the general condition much improved—I thought the worst was over, serious signs of cardiac failure became apparent, and the end soon followed.

One other death was from a gun-shot wound. Late one afternoon three men of the Customs out-door staff were walking on the city wall, one carrying a fowling-piece being a little behind the other two. As he was bringing the gun to his shoulder to fire at a passing bird, the trigger caught some way or other, and was pulled, and the shot entered the neck of one of the men in front at the level of the first and second cervical vertebræ, and half an inch to the right of the spinous processes. So close was the range that the skin round the opening (which was 1 inch in diameter) was stained by gunpowder over an area of 1½ inch all round. The right halves of the atlas and axis were smashed, the cord was cut through, and the track passing forwards, upwards, and slightly outwards, the internal carotid was severed and the important nerves of the region torn. Pellets appeared under the skin at the right inferior orbital margin, the floor of the orbit being in fragments.

Another patient, æt. 24, died from confluent small-pox at Lungping, 20 miles from this place. He had strong objections to vaccination, and declined to have it done. Could he have foreseen the anxiety and trouble which those friends who so devotedly nursed him had to endure, his anti-vaccination views (which in this country imply a decided want of consideration for others) would have been willingly put aside.

Among the Chinese the summer was healthy, though in some villages north of the river, and in one of the camps outside the city, a continued fever prevailed, with a considerable mortality. In Kiukiang itself the season has been good, and I have not heard of a single case of cholera in the whole district. The number of patients coming to the dispensary diminished by more than half, owing to the disturbed state of the Yangtze valley. Of late, in spite of renewed alarms, the attendance has increased, and at present the hospital is full.

The following case is interesting, as pointing out a method of testing for opium not generally practised in Western countries and not even named in the text-books:—

Two Cantonese, in good circumstances, one a comprador in a foreign hong and the other a writer in the Maritime Customs service, were living in adjoining houses in an alley behind the China Merchants' hong. The wives of the two quarrelled, their amahs joined in, and finally the husbands got involved in

the difficulty. It seems that the comprador's wife made some defamatory statement regarding the writer's amah, in consequence of which the latter lost her situation. She promptly went to the comprador's house, and explaining that as they had taken away her good name and means of earning a living they must now keep her, she took up her abode as a member of the household. This was borne for two or three days, and then the comprador gave the woman $30 to get rid of her. She went off with the money to her husband's house, when she was accused of getting the dollars by illegitimate ways, and told by her husband to go away for good. In the evening of the same day she returned to Kiukiang, bought on the way a quantity of extract of opium, swallowed it, went to the comprador's house, and took up her abode there as before. There they saw nothing unusual in her appearance; but towards bedtime she was noticed to be very drowsy. She became gradually worse, and at 2 A.M. I was called, and found her semi-comatose. She was carried to the hospital and measures taken to bring her round. All was of no avail, however, and she died at 7 A.M. The friends did not wish to remove the body, as their chances of blackmailing the comprador would thereby have been much diminished. A report got abroad, too, that the woman had not died of opium-poisoning, but had been beaten to death; and to give no chance of raising a disturbance, the native authorities were called upon to deal with the matter in their own way. The city magistrate accordingly sent his myrmidons to make the necessary preparations for holding an inquiry as to the cause of death. In the courtyard of the hospital they stuck four bamboo rods in the ground, 6 feet apart, and on these, at the height of 5 feet, fastened a rush mat, to protect the body. 20 yards to windward of this, and under a roof, a chair for the magistrate was placed, with his writing table in front. Between the chair and the body were several rows of lighted joss sticks, with a view apparently to masking the smell. The magistrate arrived soon after the preliminaries had been got ready, saw the corpse in the room in which death had taken place, and ordered it to be carried out and placed on boards under the mat. He then took his chair, plugged his nostrils with the dried leaves of an artemisia, and, pen in hand, was ready. His attendants and followers followed his example, and plugged their nostrils with whatever came most handy. The woman's husband was then brought forward, his evidence taken, and all signs of emotion on his part sternly forbidden, his intimate relationship with a turtle being very energetically pointed out to him from the bench. Much interest was taken in the proceedings, and roofs and walls in the neighbourhood were crowded with onlookers. The body of the deceased was now ordered to be stripped for the inspection of the official viewer. He examined it in detailed order, as prescribed, and, fortunately for the comprador, found no mark of any blow, recent or otherwise. The testing for opium then began. The mouth, nostrils, vagina and rectum were plugged with wet paper. Two probes of untarnished silver, about $\frac{1}{8}$ inch square and 12 inches long—the one end being pointed and the other turned to a ring,—were brought forward. The first was passed in by the mouth downwards as far as it would go, and the second by the rectum up to the ring. The face, sides of the head, thorax and abdomen were wrapped with sheets of moistened paper. The body was then completely covered with an old cotton quilt, and on this a second was placed, both being closely tucked in all round. Four candles were stuck in the ground, near the feet, and lighted, one of them being marked at a point which would be reached in an hour and a half from the time of lighting. Boiling water was now brought in buckets and poured over the covered corpse, kettleful after kettleful, as quickly as it could be got from a hot-water shop close by. Meantime the mother of the suicide had come, and as she was more demonstrative than the magistrate desired, she was made to squat on the ground and be silent. The father also came, and knelt in the usual way before the magistrate, who listened to him for a little, and then ordered him to sit down beside his wife and be quiet. It was a hot afternoon—over 95° in the shade,—and doubtless trying to the temper of even a Chinese mandarin. Meanwhile the pouring of water went on steadily. Occasionally his honour would enliven the waiting by some acrid remarks on the behaviour of his attendants, in a tone which indicated that they were meant for general edification. After an hour and a half the pouring of water was stopped, the face uncovered, and the probe passed in by the mouth withdrawn. It was not tarnished. Pouring on hot water was resumed; and in another quarter of an hour

it was again withdrawn, and found to be blackened. The rest of the body was then uncovered, and was seen to be much swollen, especially the abdomen, from the development of gases during the hastened decomposition produced by the continued application of heat. The probe in the rectum was also found to be tarnished. This was held to be unmistakable proof of the presence of opium. As to whether the blackening was due to the deposit of opium on the surface—the silver acting as a loadstone,—no opinion was given, but I am inclined to think that such was the mandarin's belief. The body was now placed in a coffin and taken away for burial.

A very unusual accident—rupture of hæmorrhoids from a kick,—which might have led to a disturbance, happened here a few days after the last-mentioned case.

An auction was about to commence at the house of the foreign inspector of police, when a native in white clothes was noticed to appropriate a silk handkerchief from the things to be sold. The inspector caught him and accused him of the theft, and on his denying, opened his coat and found the missing article. He took him by the queue, ran him to the gate of the yard, and gave him a parting touch with the tip of his boot. The man went away, and a few minutes afterwards I was called to a room occupied by a native guard at the T'ien-chu-t'ang gate, to see a military mandarin who was supposed to be dying from injuries received at the hands of the foreign inspector of police. I found his trousers saturated with blood. Being a petty officer, the sight of the blood caused much excitement among the soldiers, some of whom had gone for a superior. On examination, it was found that the man had hæmorrhoids, that one of these had given way, and that bleeding had already stopped, though he had lost a large quantity of blood. By way of treatment, his blood-stained garments were sent to the wash, being replaced by blue ones, he himself put in bed in the hospital for the night, and the incident was at an end. He said little, knowing that the proofs of his theft were too strong. Had it been otherwise we should certainly have had trouble with his fellows.

I am indebted to the Harbour Master for the following abstract of meteorological observations:—

METEOROLOGICAL TABLE, April to September 1891.

Month.	Thermometer.				Rainfall.	
	Maximum.		Minimum.			
	Highest.	Lowest.	Highest.	Lowest.	No. of Hours.	Quantity.
	°	°	°	°		*Inches*
April	82	53	70	44	85	6.53
May	94	64	76	52	54	3.57
June	96	75	81	66	36	5.10
July	100	77	84	71	58	6.99
August	102	79	84	73	26	3.26
September	94	71	80	59	4	0.46

DR. HENRY LAYNG'S REPORT ON THE HEALTH OF SWATOW

For the Year ended 30th September 1891.

METEOROLOGICAL TABLE, October 1890 to September 1891.

Month.	Wind.					Barometer.				Thermometer.						Weather.		
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Calm.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Averages. Wet Bulb.	Averages. Dry Bulb.	No. of Days Rain.	Rainfall.	No. of Days Fog.
1890.	D. h.	D. h.	D. h.	D. h.	D. h.	Inches	Inches	Inches	Inches	°	°	°	°	°	°	D. h.	Inch.	D. h.
October	16 18	11 0	...	2 6	1 0	30.32	29.81	30.40	29.85	83.0	68.0	82.0	65.0	68.6	73.3	0 8	1.77	0 12
November	9 6	12 18	0 12	3 6	4 6	30.37	30.08	30.40	30.17	75.0	61.0	76.0	61.0	63.0	67.2	0 18	0.29	0 16
December	13 18	12 6	0 12	1 18	2 18	30.38	29.99	30.45	30.05	74.0	55.0	70.0	57.0	55.2	64.8	1 14	2.59	1 0
1891.																		
January	26 12	1 0	...	0 12	3 0	30.45	30.10	30.45	30.10	76.0	52.0	67.0	41.0	58.0	60.0	0 2	0.16	0 1
February	13 0	9 12	1 18	0 12	3 6	30.55	29.97	30.56	29.97	84.0	47.5	71.5	42.0	55.0	58.0	2 3	1.03	1 0
March	12 6	13 12	0 6	1 12	3 12	30.45	29.88	30.38	29.92	75.0	50.5	65.0	46.0	56.5	59.5	3 2	5.71	2 6
April	8 6	14 0	2 18	1 6	3 18	30.34	29.90	30.31	29.90	84.0	57.0	76.0	50.0	64.8	67.2	2 12	3.58	0 22
May	5 6	12 18	9 6	0 18	3 0	30.27	29.82	30.25	29.85	91.0	65.0	83.0	59.0	72.8	75.1	4 1½	20.96	0 7½
June	2 18	14 6	6 12	1 18	4 18	30.04	29.60	30.02	29.67	95.0	75.0	85.0	69.0	78.2	79.9	4 4	11.11	0 6
July	2 12	13 6	12 12	2 0	0 18	30.03	29.56	30.05	29.58	93.5	74.0	85.0	73.0	79.6	82.8	3 5	15.14	...
August	4 18	13 0	7 18	1 18	3 18	30.09	29.67	30.09	29.71	96.0	73.0	89.0	73.0	79.4	83.4	2 2	8.79	...
September	10 18	9 6	2 18	4 0	3 6	30.16	29.08	30.10	29.69	94.0	70.0	85.0	70.0	77.7	82.0	1 10½	6.51	...

For the meteorological observations I am indebted to the kindness of Tidesurveyor Mr. J. H. C. GÜNTHER.

The weather during the winter months calls for no special remark. The summer was exceptionally cool and long, the heat continuing far into the autumn. Excessive rain fell during May, June and July, the rainfall registered during these months being 47.21 inches. On 23rd September the port was visited by a severe typhoon, the barometer falling as low as 29.08.

The 12 months under consideration do not admit of a favourable report, the number of deaths among foreigners exceeding that of any previous year. From all accounts, the death rate has been equally high among the natives; in the village of Kakchio, situated on the south

side of the river, at the back of the foreign Settlement, where some 200 live, I can speak from personal knowledge that they have suffered worse than the foreigners.

The chief causes of sickness were:—epidemic influenza, in the spring; gastro-intestinal catarrh, in the early summer months; and epidemic cholera, in July, August and the early part of September. Measles of a very mild nature was prevalent among the natives during the summer months; some few children of foreigners were attacked.

Cases of malarial fevers were not more numerous than usual.

In all, seven deaths occurred; the causes were as follows, one from each:—

Facial erysipelas in a paraplegic.
Chronic bronchitis with morbus cordis.
Typhoid fever.
Diabetic coma.
Epidemic cholera.
Acute nephritis with acute hepatitis.
Aneurism of the descending portion of the arch of the aorta.

Epidemic Influenza.

During the spring about 20 foreigners were attacked, and it is noteworthy that in the epidemic of last year all of these escaped. The cases were, on the whole, less severe than those of 1890, not one being followed by any serious sickness. At the lighthouses on Sugar Loaf and South Cape the entire foreign and native staff were attacked within a few days of each other. Among the native population the epidemic would appear to have been less widespread; but a greater number of cases of subsequent pneumonia applied for treatment at the mission hospital.

Gastro-intestinal Catarrh.

During the early summer months this was very prevalent, few persons escaping without a slight attack. These cases were all attended with vomiting or nausea, diarrhœa and flatulence, the stools being always deficient in bile. In all cases bile was found in the urine, and in three or four there was distinct jaundice. Usual duration was from two to four days, occasionally prolonged to from seven to ten days. 2 grains of euonymin every other night with a carminative rhubarb mixture, with careful diet, proved the most successful treatment. Prolonged diarrhœa, which only yielded after some weeks of an entirely milk diet, followed in two cases.

Epidemic Cholera.

In July, August and the early part of September cholera raged among the natives in the districts round Swatow. The epidemic was much less severe in Swatow itself than in the outlying large towns and villages. For the first time since foreigners have lived here three residents were attacked; of these, two recovered and one died. In the early weeks of the

epidemic death frequently occurred in a few hours. Many reports of death in a few minutes and of men falling down dead reached me. Towards the end the cases were much less severe, and were apparently often cured by drugs. During the cholera season many cases of diarrhœa were under treatment.

At the Seamen's Hospital two cases of cholera landed from steamers were admitted; both recovered.

Five cases of acute dysentery were treated with small doses of Epsom salts, with very satisfactory results. The drug was administered in ½-drachm doses every hour or two, for a period extending over from 24 to 72 hours. In all the cases decided improvement followed within 12 hours. The straining and pain first subsided, and the stools gradually became yellow and feculent. Ipecacuanha was given in cases side by side with these, and in one, in which it completely failed, quick improvement followed treatment with Epsom salts. The nausea and vomiting that frequently follow the administration of ipecacuanha are most distressing to the patient, and often much dreaded; these, together with the subsequent depression, are all avoided by the use of Epsom salts.

There were nine births during the year.

DR. J. WILES'S REPORT ON THE HEALTH OF SEOUL (COREA)

For the Year ended 30th June 1891.

HAVING been resident in Corea for a few months only, my present Report must consist of a short *résumé* of the principal points of sanitary interest which I have noticed during the period that I have been here.

Last summer seems to have been exceptionally trying to Europeans at Seoul. There was an unusual amount of malarial fever. Four deaths occurred—the population having been about 80, giving a death rate of 5 per cent. The causes of death were—

Abscess of liver	1	Pneumonia	1
Typhoid fever	1	Acute dysentery . . .	1 (young child).

The prevalent diseases are dependent upon malarial influences. Ague is the form most commonly met with among the inhabitants of Corea. Generally speaking, it is of mild type and readily yields to treatment. It seems to exist at all seasons of the year, and especially in the spring months.

I have, so far, seen but few cases of typhoid fever in Seoul, as for this disease the people seem to prefer the treatment, such as it is, of Corean doctors. Two cases occurred among the French mission, one of which was fatal. One was traceable to the use of contaminated water.

A considerable number of cases of leprosy come for treatment at the hospital. Most of these are from distant country villages, and it would seem that in some places in Corea the disease is very prevalent; but from my personal observation it is rare in Seoul.

It would be interesting to know how long syphilis has existed to its present extent in Corea, considering how little intercourse the inhabitants have had with other countries. Its ravages are enormous, men, women and children of all classes suffering from its effects; and if it continues unchecked, the population must deteriorate in health and strength. As it is, its evil effects upon the young children are most marked. One curious feature about its prevalence is the total lack of any feeling like shame exhibited by Coreans suffering from it. They appear to look upon it in exactly the same light that a Western would as regards an attack of measles or scarlet fever.

Ophthalmia, next to syphilis, is the disease of Corea. It is very like that met with in Egypt, and its ravages are nearly as great. Its cause is also the same—filth and contagion,—and it will be a long time before any efficient measures can be taken to prevent it. The number of children who are brought for treatment after the eyes have been quite destroyed by it is very large. In no single case that I have seen has any attempt been made to lessen its effects by

washing or removing the discharge from the eyes. In fact, the use of water is considered as generally deleterious to children.

Seoul has fortunately escaped any epidemic during the past year. In September cholera appeared in Fusan, but, from all I can learn, not in a very virulent form. One or two cases occurred at Chemulpo and also at Seoul; but the disease did not spread among the people, which was rather remarkable, considering the insanitary condition of the place. Perhaps its stoppage depended upon its reaching Seoul late in the year, when cooler.

Seoul has been unusually free from small-pox during the past year. It is always present, and, in fact, inoculation of this disease is the usual practice. Vaccination has made but slow progress among Coreans. It is difficult to get the people to bring their children to be vaccinated in sufficient numbers to keep up a supply of vaccine. Some of the Corean doctors have, however, begun to vaccinate; so that it is getting to be known. The destruction caused among children by inoculation is dreadful, and, in consequence of the contagium being applied to the nostrils, it would seem to affect their faces and produce blindness and closure of the nares. The number of children who are made blind from this is very large, and it is much to be hoped that vaccination will soon become more general.

Judging from my short experience of Corea, I consider that the climate is a very good one, and if only sanitation was a little attended to, this country would be very suitable as a sanitarium for those who suffer from the ill effects of residence in China. The climate is dry, with the exception of two months in the year, viz., July and August, and the number of bright, sunny days, even in winter, is remarkable. The winters are cold, but short, and even in the coldest weather constant sunshine makes the days pleasant.

Tuberculous disease of lungs is not common, and the children have a healthy appearance, in spite of the horribly insanitary conditions in which they are brought up.

The country, from what I have seen of it, is most fertile, and were a little attention given to sanitary matters and to the making of roads, etc., Corea seems to me to have the means of becoming not only a healthy country but also a rich one.

The estimated number of foreign residents in Corea is as follows:—

Americans	55
French	28
Germans	26
British	23
Russians	8
Italians	3
Spaniards	1
Austrians	3
Portuguese	1
Danes	1
TOTAL	149
Japanese	7,913
Chinese	1,234

In consequence of the small number of foreigners resident in Corea, little has been done to help to improve the habits of the natives as regards their insanitary surroundings and the care of the sick; but they already appreciate the dispensaries and small hospitals which have been working for the last few years, and these, it is to be hoped, may be able to extend their operations, when funds permit, so as to establish a good hospital for the treatment of disease and also for teaching medical science to Coreans and training them as practitioners.

DR. E. B. LANDIS'S REPORT ON THE HEALTH OF CHEMULPO (JENCHUAN), COREA,

For the Half-year ended 30th April 1891.

DURING the half-year ending with April there were very few cases of sickness among Europeans.

The winter was mild, more so than for many years previously, the climate in this vicinity being unusually beneficial to persons suffering from asthmatic diseases.

There has been one case of varioloid, the patient, a seaman on an American man-of-war, having contracted the disease in Japan. The attack, however, ran a simple, uncomplicated course.

Pulmonary phthisis is prevalent among the Japanese residents, especially among those coming from the southern provinces, as the climate is usually severe in winter. The Chinese residents suffer from rheumatic affections, and it is very rare to see a man who has not at one time or another had a rheumatic attack. However, these attacks are seldom fatal.

The native town is in a deplorable condition. There is not the least attempt made at drainage, and diseases due to filth and insanitary surroundings are prevalent. The European Concession is being drained and improved from a sanitary point of view. The supply of drinking-water is especially unsatisfactory, there being only one or two wells in the Settlement which are fit to be used.

The diseases most frequently observed among the natives during the winter season were syphilis, malaria, diseases due to filth, conjunctivitis and skin affections. Conjunctivitis is universal, and is frequently neglected until sloughing of the cornea takes place—or, at least, the physician does not see the cases until they reach this stage. Ear affections are not infrequent. At least one-half of the patients who come to be treated for ear troubles have perforated tympanic membrane.

Dr. E. A. ALDRIDGE'S REPORT ON THE HEALTH OF ICHANG

For the Half-year ended 30th September 1891.

The following abstract is from the meteorological observations taken at the Custom House, Ichang (latitude, 30° 14′ 25″ N.; longitude, 111° 18′ 34″ E.):—

Meteorological Table, April to September 1891.

Month.	Thermometer.				Barometer.		Rainfall.	
	Highest.	Lowest.	Average Highest.	Average Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
	° F.	° F.	° F.	° F.	Inches	Inches		Inches
April	92.0	42.5	72.5	52.6	30.32	29.56	10	5.12
May	104.5	43.0	88.6	62.1	30.15	29.49	6	3.30
June	102.0	62.0	92.9	71.8	29.77	29.43	5	3.39
July	106.0	67.0	95.9	76.3	29.70	29.36	14	5.91
August	101.5	69.0	92.3	73.9	29.88	29.63	16	10.88
September	102.0	61.0	93.3	69.3	30.11	29.70	2	0.38

As will be seen by looking at the above record, the readings of the thermometer were exceptionally high. The great heat began early in May and lasted well into September. The average temperature was about 80° F., a record of about 30° higher than that of the previous six months. The rainfall was low, it being for the six months 28.98 inches only, falling in 273 hours, making for the last 12 months a total of only 34.29 inches, which fell in 448 hours.

As regards the health of Ichang, the great heat and dryness brought about a tolerably healthy season, malarial fevers and dysentery being noticeably less prevalent, which was partly due, no doubt, to the fact that the absence of water prevented any rice crop in the low fields at the back of the city, while the streets and mud floorings of the houses were also less damp. The failure of the rice crop naturally caused an uneasy feeling among the peasantry.

The lot of a European stationed here has not been a happy one. The great heat, sleepless nights and, in some cases, severe illness, the feeling, for many weeks, of living, so to speak, at the mouth of a volcano, never knowing when the threatened day was to arrive, and, lastly, the riot of the 2nd September, have occasioned much suffering and mental anxiety.

Among Europeans the most serious maladies were one case of small-pox and three of typhoid fever, all making good recoveries. For this result, in my own case when suffering from

typhoid, I am indebted to the untiring attention of Dr. PIRIE, of the Church of Scotland Mission. Two attacks of dysentery were treated in one who had had the same complaint in other ports.

In May there was a fever prevalent among the natives, causing some deaths, which seemed, from the character of the rash, head symptoms and duration of fever, greatly to resemble typhus fever. It was declared to be very contagious; but of that I am dubious. One case of the disease was seen, ending in recovery, and none of the other occupants of the mud hovel were attacked, nor did any of the neighbours suffer.

All notes of cases attended were unfortunately destroyed in the late riot.

DR. JAMES H. McCARTNEY'S MEDICAL REPORT ON CHUNGKING.

CHUNGKING, commercially the most important city west of Hankow, is built on a stony elevation at the junction of the Min with the Yangtze. I do not think that there is another city in the Empire better situated as regards sanitary possibilities than Chungking. It occupies an elevation from 50 to 200 feet above the river level, and is traversed by numerous ravines which carry the water and a large part of the filth of the streets into the stream. The city has a population estimated at from 250,000 to 350,000, the larger part of which lives within the walls. The water supply is obtained entirely from the river. Nature seems to have favoured Chungking in this respect, by causing the main current to flow along the shore on both sides of the city, so that nowhere along either bank can still water be found. The graves at the back of the city are, for the most part, lower than the city levels, and no drainage from them approaches us.

There are few rice fields within 2 or 3 miles with stagnant water. The people take life more easily than those farther down the river. The streets are much the same as in Hankow, although the buildings are, on the average, better. In many places the streets are very filthy, but no worse than in other Chinese cities. Living in Chungking is fairly good. The meat market is improving very rapidly since the Customs came here; good beef, mutton and fowl can be obtained at almost all times.

The climate is always damp, but especially so during the summer months, when, from the heat and moisture, the atmosphere is very oppressive. From November to February there are not many bright days, and the sun is seldom seen for an hour at a time. The location of both the in-door and out-door staff of the Customs is all that could be desired from a sanitary point of view. The members of the in-door staff occupy large and airy apartments in a native building on one of the highest points within the city. The out-door staff is quartered in well-ventilated apartments adjoining a temple on the hillside above the Customs office, more than 100 feet above low-water mark.

The health of the Customs staff, both in-door and out-door, has been excellent, indigestion and a few minor ailments alone demanding treatment.

The greater part of my observations have been taken from practice among natives while conducting the dispensary and hospital work of the American Methodist Episcopal Mission. A dispensary was opened on the 1st March 1891, and during the ensuing six months more than 2,000 patients presented themselves. A hospital with 100 beds has lately been established, which will supply a valuable field for observation.

The great majority of the patients seen suffer from respiratory and skin diseases. Among respiratory diseases, emphysema takes the lead, in both chronic and acute forms, old and young, males and females, being equally subject to it. Bronchitis, both acute and chronic, comes next.

I have met with many cases of phthisis in various stages, for which tonics with creosote in mixture and inhalation appeared to be the most suitable treatment. Pneumonia is not common; I have seen but one case in nine months.

The most frequent skin diseases, here as elsewhere in China, are itch and the various forms of eczema.

Tinea circinata, seborrhœa and lupus are very frequently seen. Treatment of lupus by the sharp spoon has proved successful in many instances.

I have seen but one case of leprosy, and that happened to come to my notice while on a journey about 100 miles from Chungking. I am told that there is a village not many miles away where there are a large number of lepers.

Although I have heard that diphtheria and small-pox are the most prevalent contagious diseases, I have not seen any cases of either. Typhoid fever is not known—due, no doubt, to the good water supply and the drainage. The only case of typhus that I have seen or heard of was that of a missionary, who came to Chungking from down the river.

The different forms of malaria are common. There is a type which the natives call *han-ping* (寒病), resembling pernicious intermittent, presenting all its varieties, having the same duration, and yielding to the same treatment. This fever has been the cause of a large mortality among Chinese in and around the city since January 1891. Measles are common among children during the spring and autumn.

I have met with one case of hydrophobia:—

The patient was a woman of middle age, who had been bitten by a rabid dog about 30 days previous. The wound had healed, but the blue scar presented an inflamed appearance. She had been in spasms for nearly two days, and as I had no place in which to confine her, I did not undertake any treatment.

Venereal diseases, both in males and females, are frequently encountered, although every means of deception is adopted by the sufferers.

The diseases of women treated have been endometritis, amenorrhœa, menorrhagia and metrorrhagia, the women submitting very reluctantly to examination.

I have met with one case of ovarian tumour and one case of carcinoma of the cervix.

Four cases of labour among native women were attended:—

1°. A lady passing through the city, who had been in labour for several days. On reaching the house I found her in a very weak condition from loss of blood; the head of the child was already born. To deliver was but the work of a moment, as the child had been dead several days. After attending to the mother I left, promising to return if my services were needed. Two weeks later I was called, when I found the rectum prolapsed through the vagina and the walls necrosed. I clipped off the necrosed tissue and dressed antiseptically, and attended to the woman for a week, when she died from exhaustion, three or four large bed-sores having formed.

2°. A young married lady, 16 years old. Had been in labour for several days; had passed no urine for 48 hours. I drew off the urine, and found the head presenting at the superior strait. I delivered the woman by forceps of a dead child, but heard no more about the case.

3°. Multipara. Found the woman faint from loss of blood, brought about by the midwives attempting to crush the head of the child. Before I could do anything the woman died undelivered.

4°. Primipara; in labour 24 hours. On making an examination, found the left shoulder presenting. Applied forceps and delivered a dead child. The mother did well.

The people show a surprising readiness to submit to surgical treatment, so that I have performed over 250 major and minor operations.

Resection of the Upper Jaw.—Epithelioma of a year's standing, in a woman. The case did well at first, the parts all healing by first intention, with the exception of one spot, which would not heal. This place was cauterised with chloride of zinc; but after a month it was evident that the growth was recurring. I advised a second removal, but the friends would not consent. The case passed out of my hands and I heard no more of it.

After this there were two resections of the lower jaw in men, both for epithelioma. In one case the growth involved the inside of the cheek, which made removal difficult.

In two cases, one in a man and the other in a woman, nature was attempting resection of the lower jaw. In each a fistulous opening communicated with the outside, through which pieces of bone were from time to time discharged. After aiding nature by the removal of the dead bone, the fistulæ soon healed.

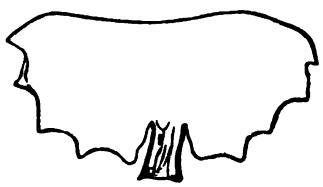
Out of three excisions of the knee, I was able to obtain the subsequent history of two. In one of these there will be considerable motion.

A few amputations of fingers and toes, as well as excisions of non-malignant tumours, have to be added to the record.

In one case enterotomy was done, but was followed by death:—

A female, 4 months old, with the following history. The umbilicus would not heal, and in order to make it do so a native doctor resorted to plasters and, finally, to the knife; but during his operation he cut too deep, and let out the intestines. This so frightened him that he did not wait to see the extent of the injury, but forthwith left the city. I was called eight hours after the accident, and found 4 or 5 feet of the intestines out on the abdomen and covered with a dirty blue rag. The bowels were greatly swollen, inflamed, and distended with gas, and the child was unconscious. There was a longitudinal cut in the gut, 3 or 4 inches above the vermiform appendix, evidently made by the knife. Under chloroform, the bowels were stitched with catgut (continuous suture), cleansed with warm antiseptic solution, and returned to the abdominal cavity, which was closed carefully. The child died three hours later.

Mr. L., aged 35, gave the following history. A few years ago he had a silver plate with one tooth attached made at Shanghai. Two months previous to my seeing him he had swallowed the plate, in some manner not clearly stated. Soon after, he presented himself at one of the dispensaries in the city and gave the history of the case; but after the physician had tried different means of determining whether the plate was in the throat or not, he decided that it was not, and told the patient so. Two months passed and the pain still continued, with difficult swallowing and hoarseness. At this juncture he came to my notice. I passed a small bristle probang, which met with considerable resistance 3 or 4 inches below the base of the tongue. After entering the stomach I opened the probang and began to pull. At the same point an object was encountered, which required considerable force to move. After many efforts the plate was detached and drawn out. Below are its outline and dimensions in Chinese inches:—



$1\frac{3}{10}$ inch long and $\frac{8}{10}$ inch wide.

After it was extracted very little bleeding took place. I ordered mucilaginous drinks and told the patient to call again, but he never came.

A multitude of cases with carbuncles in all stages have presented themselves.

The treatment was the injection of pure carbolic acid—10, 15 or 25 minims,—or crucial incision.

The following meteorological observations were taken by Messrs. STRONG and STOCKWELL, of the Chinese Customs service:—

METEOROLOGICAL TABLE, January to September 1891.

MONTH.	ATTACHED THERMOMETER.		BAROMETER.		THERMOMETER.							
					Dry Bulb.		Wet Bulb.		Maximum.		Minimum.	
	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.
	°	°	*Inches*	*Inches*	°	°	°	°	°	°	°	°
January	64	43	29.08	28.68	58	42	54	41	54	43	58	40
February	74	38	29.36	28.60	74	36	61	34	74	36	64	34
March	80	52	29.18	28.68	76	48	67	47	76	49	60	47
April	96	57	29.36	28.62	94	54	75	52	94	54	81	51
May	96	64	29.18	28.70	95	60	81	61	95	60	88	60
June	94	72	29.10	28.68	91	70	83	67	91	70	82	64
July	96	74	28.96	28.60	94	73	87	71	94	73	90	73
August	96	74	29.04	28.74	95	72	86	69	95	72	85	71
September	96	70	29.20	28.86	93	66	79	65	93	66	85	60

The rise of the river during July: maximum, 65 feet; minimum, 32 feet. August: maximum, 43 feet; minimum, 28 feet. September: maximum, 46 feet; minimum, 25 feet.

DR. A. SHARP DEANE'S REPORT ON THE HEALTH OF PAKHOI

For the Half-year ended 30th September 1891.

THE health of the foreign residents and native population for the period under review has been exceptionally good.

As regards the foreign residents, with the exception of a few cases of herpes and boils—common affections here during the latter half of the hot season,—slight attacks of diarrhœa, and sore throats, no cases of illness have occurred.

A resident missionary was invalided home suffering from remittent fever, with hepatic complications, contracted while on duty in Kwangsi.

The birth of a male child took place on the 30th September.

With regard to the native population, from what I could learn in the immediate neighbourhood of Pakhoi and at Lien-chou and other outlying towns, it appears that the health of this district has been better than during the corresponding period last year and far above the average for some years past.

On the 11th July the decennial procession and general festival, on a large scale, was celebrated, as a thanksgiving for the comparative immunity that this district has enjoyed from plague, pestilence and all deadly diseases for the last 10 years, and also as a precautionary measure against their appearance here within the next decade. The ceremonies extended over a period of six days and cost about $7,000.

Diarrhœa and cholera, which usually prevail from July to September, were this year almost absent, and, in consequence, we were relieved from the depressing influence of funerals, with their concomitant bagpipe-like music, and the discordant inspirations emitted by mourning women, who think it necessary to produce the most fiendish sounds of which the human voice is capable during inspiration—a form of crying, I think, peculiar to this nation.

Measles was epidemic during April. The cases were mild and ended favourably.

Bubonic plague was rumoured to be in and in the vicinity of Pakhoi during April, owing to three persons having died suddenly in a house close to the town and other cases of sudden death having taken place in this neighbourhood. There was not, however, the least foundation for such a report. The three people that died in the house were found dead by their neighbours, and the probability is they had eaten food containing poison the night previous to the occurrence, as they seemed to be in good health the day before.

From May to the end of September the temperature was higher than usual. The wind was variable; south-easterly and south-westerly winds, which are damp and productive of much

lassitude, did not blow so continuously as during the previous two years, northerly winds being frequently experienced. At no time were we left without rain for more than a fortnight. Heavy thunder-showers fell at short intervals all through the hot weather, which washed out the town regularly and drove the fermenting filth into the sea. The rainfall for the six months ended 30th September reached a total of 53.34 inches, being 0.52 inches less than in 1890 and 7.02 inches less than in 1889 during the corresponding periods. In 1889 diarrhœa and cholera were very prevalent, mainly owing to the irregularity of the rainfall during the first half of the hot season. In the following meteorological table the temperature has been taken according to the rules laid down by the Hongkong Observatory:—

METEOROLOGICAL TABLE, April to September 1891. (Latitude, 21° 29′ N.; longitude, 109° 6′ E.).

MONTH.	THERMOMETER.			Rainfall.	MONTH.	THERMOMETER.			Rainfall.
	Highest.	Lowest.	Mean.			Highest.	Lowest.	Mean.	
	° *F.*	° *F.*	° *F.*	*Inches*		° *F.*	° *F.*	° *F.*	*Inches*
April	90.0	51.0	70.0	1.10	July	95.0	73.0	85.0	3.83
May	99.8	63.0	76.6	5.73	August	97.0	73.0	83.0	26.08
June	95.0	74.0	84.7	10.58	September	95.0	73.0	83.0	6.02

DR. J. H. LOWRY'S REPORT ON THE HEALTH OF WENCHOW

For the Half-year ended 30th September 1891.

FOREIGN POPULATION, WENCHOW AND DISTRICT.

Male adults	12
Female adults	6
Male children	2
Female children	2
TOTAL	22

The general health of foreigners resident at this port was only fairly good during the past six months. Every member of the Customs staff has been under treatment. The new out-door staff quarters, on Conquest Island, will, it is hoped, prove a benefit. So far, both members of the staff who live in them have suffered from malarial fever; but it is possible that the poison entered their systems during the time they lived in the former unhealthy quarters. Time will show whether the new buildings are more healthy.

The season was exceedingly wet, rain having fallen almost continuously from April to September. A glance at the meteorological table shows how large the rainfall has been.

One birth and one death occurred during the period under review.

The death was due to acute dysentery; the subject being a missionary lady brought in from an outlying district. Her case was a severe one, and she died on the second day after arrival.

On 8th September another missionary lady met with a severe accident; she fell from the city wall to the street below, a distance of from 20 to 30 feet, and received a compound fracture of the arm.

During July, when H.B.M.S. *Redpole* was stationed here, the sailors suffered much from diarrhœa and fever; they seldom went ashore, yet they had fever of a malarial type. The ship was lying in mid-river. The diarrhœa was lessened by Surgeon BRADLEY putting a veto on fruit being brought on board.

There was said to be a great deal of sickness in August and September among the native community in the city; no cases, however, came under my notice. But from what I heard, the sickness and increased mortality was due either to cholera or choleraic diarrhœa, probably the latter. I am unable to obtain any reliable details as to the mortality; so it is useless to speculate. It is not surprising that there is sickness in the city, for a privy atmosphere pervades the place. Privies and latrines are numerous in every street, and, I understand, are very profitable mercantile speculations. The city has changed a good deal since

Dr. W. W. MYERS wrote on the "Sanitary Condition of Wenchow." * No doubt the increased population has much to do with the change. The streets are no cleaner than I have observed in other Chinese cities and are very unsavoury, and, as I have already said, a privy atmosphere pervades the place, and must be deleterious to the public health. The pleasant sea breezes which Dr. MYERS speaks of do not seem now to reach us, and the poor "cathedral city," as he calls it, suffers in consequence.

The diseases observed and treated during the past six months have been :—

Remittent fever.	Dysentery.
Intermittent fever.	Bronchial catarrh.
Congestion of liver and biliary derangement.	Bubo, result of strain.
Diarrhœa.	Herpes round folds of axilla.
Eczema.	Hæmorrhoids.
Neuralgia.	Compound fracture of arm.
Cardiac palpitation.	Incised wound of hand.
Aural catarrh.	Vermes.
Hernia.	Cancer of womb.
Nerve prostration and debility.	Varnish or lacquer poisoning.

Two cases of varnish-poisoning came under my notice. They reminded me much of erysipelas. Recovery was slow, and treatment seemed useless, as I believe other observers have found it.

I append an abstract from the Customs meteorological observations taken at this port (latitude, 28° 1′ 30″ N.; longitude, 120° 38′ 28″ 50‴ E.).

METEOROLOGICAL TABLE, April to September 1891.

MONTH.	Highest Reading of Barometer.	Highest Day Reading of Thermometer.	RAINFALL.		REMARKS.
			No. of Days.	Quantity.	
	Inches	° *F.*		*Inches*	
April	30.400	79	18	6.61	Several severe thunder-storms occurred, but the port has not been visited by any typhoons.
May	30.346	90	19	7.40	
June	30.056	89	16	7.77	
July	30.026	90	17	9.56	
August	30.550	93	16	15.33	
September	30.450	94	12	8.91	

NOTE.—"An 'inch of rain' means a gallon of water spread over a surface of nearly 2 square feet, or 3,630 cubic feet = 100 tons upon an acre."—*Whitaker's Almanack*, 1891, p. 53.

* Customs *Medical Reports*, xv.

DR. ROBERT H. COX'S REPORT ON THE HEALTH OF WUHU

For the Two and a Half Years ended 30th September 1891.

THE general health of the foreign community (now numbering 55 persons) has been satisfactory during this period.

There have been three births and two deaths—one death from heart disease and the other from infantile diarrhœa. A non-resident also died from cholera.

Malarial diseases were by far the most common, diseases of the intestinal and respiratory systems coming next in sequence.

An epidemic of influenza reached this port in March 1890, when about 20 per cent. of the community were attacked. It made a second visit just six months later, resulting in about half as many victims. Two cases were accompanied by orbital neuralgia and one was followed by severe bronchitis; the others, for the most part, had mild attacks. Cases occurred later among the natives, and the malady remained with them till late in the summer.

Small-pox attacked three residents in the beginning of 1891. In each case the infection appeared to have come from the Chinese, as the patients dwelt wide apart and had no direct communication with one another. All three cases were of a light nature, but the condition of one (she being three months pregnant) gave rise to grave fears, which were happily not realised. All made good recoveries, with little pitting.

Whooping-cough, also from a Chinese source, attacked three children of a family in February 1891. There was no further spread.

Cholera made its appearance here in September 1890, in the person of a Chinese fireman on one of the river steamers, on the voyage from Shanghai. As an example of the risk run by the community at a place where no accommodation for infectious diseases exists, the following account may not be out of place here:—

I found the patient, on arrival, in the stage of collapse, and as there was no hospital for the reception of infectious diseases, recommended that he should be placed in a native boat moored in the stream, and gave directions for the disinfecting of the steamer. This was done; but as a storm was brewing, the men in charge of the patient took the boat to the shore for shelter. On this being discovered, the agent had the boat brought under the lee of his hulk; but in the morning it was absent, and, on a search being made, the patient was discovered in a comatose state among the Chinese passengers on

board a steamer bound for Shanghai. He was again removed to the boat anchored in the stream, where he died about noon. The body was placed in a coffin and deposited on some waste ground at the back of the town, till December, when it was allowed to be forwarded to Shanghai for burial. Though the Consul, Commissioner and the agent of the steamer endeavoured to carry out the isolation of the patient, and the Taot'ai had sent some soldiers to guard the boat, yet the risk of infection on two occasions—when at the shore at night and among the passengers in the early morning—was very great.

To avoid such risk in future, I would suggest that ports on the river unprovided with a fever hospital should have a large covered cargo-boat, properly fitted, for the reception of such cases, which could be moored in the stream at a distance from the town.

A second death from cholera occurred at this port in August 1891.

W. C., aged 50, a pilot on board a steamer loading rice here, had diarrhœa for two months, previous to which he had enjoyed excellent health. The ship had left Shanghai (where there were several cases of the disease) 48 hours before the malady declared itself, the patient navigating the ship and feeling in his usual health. The day before the attack he had eaten a hearty tiffin, including some peaches. Next morning diarrhœa and vomiting set in, which alarmed the officers of the ship, and a signal for medical aid was made, which promptly brought the two surgeons of the English and French men-of-war to his assistance.

On my arrival at noon, just after their departure, I found the patient with severe cramps in the calves of his legs, causing him to cry out; his face, hands and feet were cold, bloodless and wrinkled; his eyes were sunken and his voice hollow and weak; in fact, he was in the algide stage. During my visit he had two watery, colourless motions, and had vomited a similar fluid. The chlorodyne and brandy already prescribed were continued, the former in 40-drop doses every hour, and of the latter a teaspoonful in water every 10 minutes. Hot-water bottles were applied and the calves of his legs ordered to be rubbed during the cramps. Precautions were then taken to prevent the spread of infection.

I called again at 4 P.M., with the English naval surgeon, when we found that the interval had been passed with much less distress—cramps, diarrhœa and vomiting having left him for nearly two hours. His breathing, however, was very shallow and quick (about 50 to the minute), and his extremities still presented the same appearance, notwithstanding the hot-water bottles kept constantly renewed. Before we left the vomiting returned, leaving him extremely weak. His pulse could just be felt at the wrist. Brandy was directed to be given in increased doses and the chlorodyne stopped.

Shortly before 6 o'clock I was called to see him again, only to find him dead. He had passed away quietly, while being supported by an attendant. The after-death appearances differed little from his former condition. The body showed considerable wasting, and the muscular contractions were very marked, so much so that at first sight I thought he was still alive. As the quarters occupied by the patient were easily isolated from the rest of the ship, they having been thoroughly disinfected and secured, the vessel was allowed to proceed on her voyage. No further cases occurred on board.

A case of abscess of the liver which came under observation is perhaps worthy of detail.

A. B., aged 37; had been seven years in China. Health was good during that time, though he had contracted fever at Tamsui in 1886. When seen he complained of feeling unwell, with pain in the epigastrium. Had a muddy complexion, with yellow-tinged conjunctivæ. On examination, a place was found very tender to the touch in the region of the gall bladder, with marked swelling. After treatment with mercurial and saline purgatives and hot local applications, the tenderness diminished and fluctuation became apparent. A daily rise in the temperature to 102° towards evening was noted. He had also

a rigor, when the temperature rose to 104°. After 10 days there was a slight improvement, and he was sent to the hills near Kiukiang for a week, where he gained some strength and appetite.

On his return the swelling and fluctuation were not so evident; but his health became worse, appetite and weight decreased, with much trouble from night sweats. The motions were pale, which he attributed to an almost milk diet. He was then sent to Shanghai for operation; but on his way down was attacked with "diarrhœa" (caused by rupture of the abscess into the bowel), which continued after his admission into hospital and was accompanied by a reduction in size of the swelling. After a tardy convalescence he was discharged cured, 10 weeks from admission, and has enjoyed excellent health since, now over 12 months.

Among the Chinese, ague and skin and venereal diseases are the most common. In the winter of 1890–91 a small-pox epidemic of unusual severity was present in this neighbourhood, when upwards of 2,000 children under 12 years of age were said to have died from the disease.

Many cases of opium-poisoning have been treated. The females in every case recovered, owing, probably, to their taking a smaller quantity, and perhaps regretting the act as soon as performed, obtaining aid before the complete absorption of the drug. Success with male patients has not been nearly so great, the summons to attend often dating several hours after the swallowing of the poison, and on two occasions death occurred before my arrival. The stomach-pump, emetics, strong hot coffee, hypodermic injection of atropine, forced exercise and artificial respiration were the remedies employed.

Several obstetrical operations were performed, including nine craniotomies, in only one of which the mother did not recover. This result is remarkable, considering the surroundings of the patients and the fact that foreign aid is seldom sought till the native midwives have abandoned hope and the patient, leaving her often in a very low condition indeed.

The following may be taken as an example of the rest:—

A primipara, aged 24, living on board a junk, had been nine days in labour. She was in a very exhausted state, almost pulseless. Urine had not been voided for three days. Examination showed the labia œdematous, and a red, serous fluid exuding from the vagina. The head was fixed in the brim of the pelvis, with the vertex presenting. After the administration of brandy and egg mixture, and the bladder had been emptied by catheter, BARNES' forceps were introduced with considerable difficulty, and traction maintained at intervals for nearly an hour, with the result that the head was moved somewhat; but the smallness of the pelvic outlet and the unhealthy condition of the soft parts rendered extraction by this means impossible. A perforator was therefore passed between the blades of the forceps and a crucial incision made, and the brain matter broken up. Traction was again tried with the forceps, and though a large quantity of brain matter escaped through the incision, from the pressure of the forceps and pelvic walls, yet the head remained fixed. The forceps were then withdrawn and a cranioclast introduced, grasping some of the skull and scalp, when, after some delay, the delivery of the body of a large female child, much decomposed, was effected. A putrid fluid mixed with meconium followed the birth. Ergot was given, and the placenta removed with the hand in the uterus, which was then washed out with a warm solution of permanganate of potash, and a binder applied.

The perinæum was lacerated, but no sutures were inserted, owing to the œdematous condition of the parts. The permanganate injections were continued for a week, and the patient recovered without a bad symptom.

In the above case I was led to continue the forceps traction longer than necessary, partly from the wish expressed by the patient that I should not mutilate the child, though it had been dead for days, and from the fact that I had moved the head somewhat by that means. No anæsthetic was administered, owing to the extreme weakness of the patient; but brandy and egg mixture was given frequently by a female attendant from mouth to mouth. The smallness of the room added much to the difficulties of the operation, it being the lower stern compartment of a junk, about 10 feet by 6 feet and only 4½ feet high, with beams and ropes running across, rendering most movements cramped and standing up impossible.

I consider the favourable results in these cases largely due to the position assumed by native women after labour, viz., with the head and shoulders well raised, so that the body is at an angle of about 45° with the horizon, thus allowing thorough drainage. After excessive postpartum hæmorrhage this position, of course, could not be recommended.

The following case, from its rarity, is worthy of record:—

A Chinese boy, aged 13, was admitted to the Wuhu General Hospital with a tumour, the size of a large orange, situated below and posterior to the right mastoid process. The skin and scalp covering it were stretched, but of natural appearance, and the swelling, which had been increasing in size for several years, was soft and apparently movable. Sebaceous cyst was diagnosed. A vertical incision about 4 inches long was made through the integument; but on trying to enucleate, by dissecting the flap on one side, it was found that the tumour had not yet been reached, and the aponeurosis was divided with a similar result. An exploratory incision was then made, which was followed by a jet of dark blood. This was immediately arrested by the finger, and a hypodermic needle was then passed into the tumour, some distance off, when blood-stained serum came away. The sac was emptied of its contents, consisting of blood and bloody serum and clots, when the occipital bone under the superior curved line, apparently eroded, and the transverse processes of two cervical vertebræ could be felt at the bottom of the cavity. The sac quickly refilled, and was again emptied and compresses applied. The patient was put to bed and carefully watched. The following evening the bandage was removed, when very marked pulsation was present in the swelling (which had increased considerably in size), easily checked by pressure on the common carotid. This was therefore tied, and pulsation ceased. The contents of the sac suppurated, and the patient left hospital in six weeks cured.

I think that this was, without doubt, a case of aneurism of the occipital, the occurrence of which in one so young, and in the absence of a history of injury, is remarkable.

A compound dislocation of the ankle without fracture of either bone occurred in the person of a Chinese male, aged 19.

While removing a signboard, he fell from a stool about 18 inches high, the right foot doubling inwards on the uneven pavement. The dislocation was easily reduced by traction on the foot, with the leg flexed on the thigh, but the re-covering of the external malleolus, which projected through a rent in the skin quite 2 inches above its tip, was with some difficulty accomplished, with the aid of a bone elevator, without incision. The limb was placed on a DUPUYTREN's splint, along its inner surface, and an irrigating apparatus applied. The wound healed by granulation in a fortnight, and three weeks later the patient was able to walk without support. Nine months after the accident he came to return thanks, and declared that the wounded ankle was as strong as the other.

The following illustrates the danger of entrusting loaded firearms to the care of unskilled persons:—

A Cantonese, aged 40, went pheasant-shooting, accompanied by a coolie, who carried his gun for him, loaded and cocked. The sportsman was in front, his attendant being about 10 feet behind, with the loaded gun in one hand, while with the other he was carrying some of his master's clothes. As he was rearranging his burdens, he appears to have caught the gun by the triggers, which was at once followed by a double discharge, and his master dropped. Assistance was procured and he was carried home. I was then sent for, and found the patient in a very excited state, and heard his own recital of the particulars of the accident. Two circular wounds, each about 6 inches in diameter, were situated, the one between and overlapping the shoulder-blades, and the other lower down to the left, corresponding to the interval between the eighth and twelfth ribs. Blood and blood-stained serum were oozing from the perforations in the integument. The patient's body was luckily clad in three garments, the middle one padded with cotton wool, so that most of the iron pellets carried with them a tuft of cotton, thus preventing their deep penetration. Many shots were removed, ranging in size from No. 8 to No. 1. He was taken into hospital by Dr. STUART, who removed what remained, and he was discharged cured two months later.

A peculiar disease of an epidemic nature is said to be constantly present during the hot weather; *yang-mao-ch'êng* (楊茂成) is the common name for it. It begins with fever and diarrhœa, during which the Chinese doctor is called in, and, from the character of the pulse, diagnoses the disease and proceeds to apply the remedy. This usually consists of wheaten flour mixed with hot samshu, which is spread over any part of the patient's body the physician may select. It is removed after some time and examined, when some small white hairs may be seen in its substance. I was fortunate enough on one occasion to see a similar treatment applied.

A boy, aged about 10 years, evidently dying from tubercular meningitis, was lying comatose in bed, while an old woman (whose appearance would have cost her at least a ducking in Scotland a short time ago) was leaning over him and rubbing his abdomen with a handful of rush-pith steeped in samshu. After five minutes' friction this was handed to an assistant, when, to the joy of the parents, some of the characteristic hairs were found in it. I then examined some of the rush-pith stewing in samshu ready for use, but could not discover any hairs till the samshu was squeezed out and the spirit partly evaporated, when they became evident.

From this it will be seen that the remedy gives the name to the disease.

It is very common to see maggots being extracted from the eyes of credulous patients in the streets of the native city. The operator sits opposite his patient and inserts the square end of a chopstick between the lids of the affected eye, and rotates it so that the part next the eye moves in an upward direction, when in a few minutes a maggot appears on its upper surface. The patient pays for each as it is extracted, and the supply is regulated by the length of the patient's purse. Each oculist uses his own particular maggot, but sesamum seeds, soaked in water and cleaned, are the ones in general use. The amount of ophthalmia propagated by this means can only be imagined.

The Wuhu General Hospital, under the auspices of the American Methodist Mission (situated on I-chi-shan, a hill on the river bank, about 1½ miles below Wuhu), was opened in 1889, in charge of Dr. STUART of that mission.

For the following extract from the Customs meteorological observations I am indebted to Mr. Acting Harbour Master KINDBLAD:—

METEOROLOGICAL TABLE, April 1889 to September 1891.

MONTH.	THERMOMETER.		BAROMETER.		RAINFALL.
	Maximum.	Minimum.	Maximum.	Minimum.	
1889.	°	°	*Inches.*	*Inches.*	*Inches.*
April	86	41	30.26	29.74	3.67
May	90	52	30.28	29.74	3.72
June	94	65	30.00	29.62	11.15
July	99	71	29.98	29.70	3.60
August	98	67	30.14	29.78	1.32
September	92	54	30.29	29.82	8.05
October	80	46	30.26	29.76	8.35
November	68	33	30.43	29.74	2.27
December	58	23	30.46	29.94	0.05
1890.					
January	58	26	30.42	29.80	1.28
February	67	30	30.44	29.52	1.94
March	70	31	30.40	29.70	5.17
April	88	44	30.17	29.48	5.62
May	93	47	30.07	29.60	3.73
June	94	62	29.80	29.50	6.71
July	99	72	29.77	29.38	4.83
August	97	67	29.78	29.58	3.73
September	89	61	30.05	29.62	0.10
October	83	46	30.28	29.84	0.06
November	75	35	30.40	29.90	4.34
December	66	24	30.36	29.70	1.48
1891.					
January	52	24	30.35	29.92	0.36
February	62	19	30.53	29.74	2.37
March	79	34	30.34	29.68	0.97
April	85	42	30.22	29.60	4.13
May *	...	...	...	...	...
June	95	67	29.76	29.46	3.42
July	98	69	29.72	29.44	8.00
August	97	70	29.93	29.56	5.86
September	92	65	30.05	29.62	3.52

* Observations interrupted during riot.

ABDOMINAL HYSTERECTOMY IN JAPAN.

By WALLACE TAYLOR, M.D.

THIS article is confined chiefly to the technique of the operation, and is not designed to discuss the advisability of operating or the question of electricity in uterine myomata. It is sufficient to say that the operation is confined to myoma and cancer of the uterus too large to permit of vaginal hysterectomy.

Abdominal hysterectomy has occupied a prominent place in the discussions of gynæcological surgeons for the last few years. Many points which five years ago were unsettled and in regard to which there was much discussion have now, through the increased experience of many operators, become well defined, and surgeons are generally agreed as to what should be done and how to proceed. Some minor points are not yet settled and probably will never be, each operator having his own method of operating. But sufficient has been established to justify a brief review of the subject and ascertain the consensus of surgeons in regard to it.

The old question of whether the pedicle should be treated intra-peritoneally or extra-peritoneally has been decided in favour of the extra-peritoneal method. The intra-peritoneal method, in which the pedicle was dropped back into the abdominal cavity, was attended by too great a mortality to be retained as a justifiable procedure. Even the method of cupping the pedicle and bringing the flaps together by means of buried sutures, and finally covering all with the peritoneum, could not redeem it. It was too time-consuming and attended by too high a mortality. A retrospective view of the technique shows its deficiency. The shrinking of muscular tissues loosened ligatures, to be followed by hæmorrhage, and for the necrosis and suppuration of tissues there was no adequate outlet.

The method of enucleation in suitable cases, as practised by MARTIN of Berlin, and others, with closure of the peritoneal flap and drainage through the vagina, has also been given up for like reasons.

The extra-peritoneal method has also undergone modification in the meantime. The old method of surrounding the lower part of the uterus, including the tubes and ovaries, with two turns of rubber tubing held by a tourniquet, so as to check hæmorrhage while the upper part of the uterus and tumour are amputated, leaving a pedicle as thick as a man's arm or a child's thigh to slough away, has become a thing of the past.

The approved technique of the present time is to ligate the broad ligament outside of the tubes and ovaries with interlocked sutures till the lower part of the uterus is reached, then dissect down peritoneal flaps (anterior and posterior) till the cervix is reached, secure this small pedicle with a wire constrictor and *serre-nœud*, stitch the peritoneal flaps to the lower angle of the abdominal incision, suspend the pedicle by transfixing pins on the abdomen and close the incision.

The Fallopian tubes in fibroma are apt to be cystic, and hence should be removed with the uterus. But if the tubes are normal, and especially if the patient is young, it is well to ligate and incise near the uterus and allow the tubes and ovaries to remain. The psychical result is claimed by some authors to be better.

Dr. J. PRICE, of Philadelphia, says the operator who constricts a pedicle as thick as a man's arm does not know how to make a pedicle. You can strip down the peritoneum as the old farmer does his barn-door plants until you reach the circumference of the internal os; and thus the pedicle can always be reduced to the size of a man's thumb. While this is true of the great majority of cases, yet a case is occasionally met with where the tumour has so developed as to obliterate the cervix, and one or both lips of the os may be found flush with the vault of the vagina. In such a case complete extirpation of the uterus is the proper procedure.

The results of thus treating the pedicle extra-peritoneally are good—very much better than by any intra-peritoneal method. PRICE reports 6 per cent. of deaths in his first hundred operations, and states that, excluding malignant cases, the mortality should not be over 2 or 3 per cent. Other operators report favourable results, if not quite so good as PRICE'S. So the operation is brought within the sphere of legitimate surgery.

Objections are brought against this method that it disturbs the normal relation of adjacent organs, making traction on the rectum and compressing the bladder. These objections, however, appear to be theoretical rather than practical, for the parts soon adjust themselves to their new relations and their functions are not materially disturbed. To obviate these objections, KELLEY, of Baltimore, drops the pedicle below the level of the abdominal wall, after sewing the reflected peritoneum to the edge of the incision, and thus suspends it within its peritoneal involucrum from pins across the abdomen. BYFORD, of Chicago, makes an incision into the vagina and turns the raw end of the pedicle into this incision, leaving it to slough off within the vagina. These devices, however, have not been generally accepted and have remained chiefly with those who originated them.

Total extirpation of the uterus without leaving a stump, and closing up the abdominal incision, is now practised by many surgeons with encouraging results. MARTIN, adapting FREUND'S method of extirpating the cancerous uterus to fibromata uteri, now performs complete extirpation. Dr. KRUG, of New York, reports favourably of his work in this line, and states that the technique he uses is the outgrowth of his operations of vaginal hysterectomy, and is original with him. He ligates the broad ligament from above downward, using in general three ligatures on each side—one for the tubes and ovaries, a second one for the broad ligament, and a third for the uterine arteries; separates the bladder from the uterus; makes an incision into the vagina, anterior and posterior to the cervix; and then joins these incisions by lateral ones, which, if the uterine arteries have been well ligated, is done without hæmorrhage. The ends of the ligatures are left long and brought out through the vaginal opening, when a gentle pull will invert the stump of the broad ligament sufficiently to keep it away from the intestines. The pelvis is packed with strips of iodoform gauze, with the ends protruding into the vagina to facilitate removal, and the abdominal incision is closed.

In cases of cancerous uterus, total extirpation, with complete removal of the cervix, is the ideal operation, and this operation meets the requirements. Objections are brought against

it that it breaks the vaginal arch and thus weakens the support that otherwise would be given, and that it removes more than is absolutely called for (the cervix), except in cases of malignant disease, and hence that it is unnecessarily tedious and time-consuming. Dr. PRICE also brings in the objection (against the operation of complete extirpation and in favour of the extra-peritoneal method) that it unduly exposes the ureters to the risk of ligation.

The tendency in surgery is towards conservatism and simplifying the technique, so as to secure rapid work. CHROBAK has made a step in this direction by his modified technique, which he calls the retro-peritoneal method. This consists in making anterior and posterior peritoneal flaps, excision of the cervix above the vaginal junction, dilating and cauterising the cervical canal and then passing an iodoform wick through it into the vagina, and finally bringing the peritoneal flaps together above the cervical stump and upper extremity of the gauze drain, thus completely closing up the peritoneal cavity and leaving the raw surfaces underneath to granulate and heal. He reports 17 operations in nine months by this method without a death.

Dr. BAER, of Philadelphia, practises a modification of CHROBAK'S method. He ligates the broad ligament outside the tube and ovary with one ligature down to the cervix, places another ligature (if necessary) down along the side of the cervix, applies pedicle forceps next the tumour or uterus and severs the broad ligament at each step. He then makes anterior and posterior flaps, commencing an inch or so above the peritoneal reflexion of the bladder in front and somewhat lower behind, and ligates the uterine arteries within these peritoneal flaps outside of but close to the cervix, avoiding the cervix on one hand and the ureters on the other. The cervix is drawn out by traction on the tumour and amputated well down by a sort of cupped incision, the stump seized with volsella forceps and trimmed until the supra-vaginal portion is removed. The cervical stump is then dropped back "without a single ligature or suture in its tissue." The cervical canal is not treated. The elasticity of the vagina withdraws the stump out of sight within the peritoneal flaps, the upper edges of these flaps are turned in so as to bring their peritoneal surfaces together and are left without suturing, and the abdominal incision closed. The temporary ligature is not used.

The advantages claimed for this procedure are that it is safe from hæmorrhage and sloughing, and leaves the cervix in its natural anatomical position. The objection brought against it is that the raw surfaces of the peritoneal flaps may suppurate and thus infect the peritoneal cavity. BAER reports nine consecutive successful cases. TRENDELENBURG'S position is used.

It has become fashionable to quote POZZI now. But we turn to POZZI in vain for any new light on abdominal hysterectomy.

My experience with this operation is limited, being confined to five cases at the Choshun Hospital, Osaka. The results are, however, encouraging, as I have had four consecutive successful cases, and the fifth—a malignant case—a failure from an accident at the close of the operation.

CASE I. — *Uterine Myoma; Abdominal Hysterectomy, Extra-peritoneal Method.* — Mrs. J., æt. 43. Puberty at 17; married at 23; has never been pregnant; menses still continue. Duration of tumour,

four years. Operation performed on account of continued hæmorrhage and pain that failed to be relieved by treatment.

Operation, 17th May 1892.—The abdominal incision extended from just below the umbilicus to near the pubes. The tumour and uterus were turned out with Tait's screws. The broad ligament was clamped outside the ovaries and tubes with Wells's large catch forceps, another forceps placed next the uterus to prevent distal hæmorrhage, and the broad ligament excised so as to remove the tubes and ovaries with the tumour. Two sets of forceps were used on the left side and one set on the right side, the bleeding points on the right side being caught with small catch forceps. The boundary of the bladder was outlined by a sound passed into it, and the peritoneum incised across from side to side about 1½ inch above and dissected down till the cervix was reached, by means of the closed points of curved scissors, snipping a band of fascia here and there. The posterior peritoneal flap was dissected off in the same way. The peritoneum on the posterior surface is much more closely adherent to the uterus and cervix than on the anterior, and must be dissected off with the point of a scalpel, or, what is better, using the cutting point of a blunt pair of curved scissors; and it is well to strip down the external muscular layer with the peritoneum.

An attempt was now made to secure the cervix by means of a constricting wire and *serre-nœud;* but the Delta-metal wire had crystallised, and every time it was bent over the catch it broke, so it had to be abandoned, and the cervix was transfixed and ligated with a double ligature and the tumour cut away. The cervical canal was curetted and cauterised. The broad ligaments were now secured by interlocked ligatures down to the peritoneal flaps and the forceps removed as the ligatures were drawn tight. The peritoneal flaps were stitched to the skin at the lower corner of the abdominal incision, a drainage tube inserted and the abdominal incision closed. The pedicle was suspended by means of transfixing pins passed through it at right angles above the ligatures and resting on the abdominal wall. Aristol was packed in around the raw surfaces between the pedicle and the peritoneal flaps, and a mixture of one part of iodoform and five parts of boracic acid heaped up to cover all completely. Temporary elastic constrictor was not used.

The tumour weighed 1¾ lb., and was a spongy, elastic myoma. It was intramural, situated in the right side and fundus of the uterus, and was surrounded within and without by uterine tissue from ⅛ to ¼ inch thick. There were several small myomatous nodules besides the main tumour.

The recovery of the patient was uneventful. The drainage tube was removed within 24 hours, the bowels moved by saline enemata on the third day. The pedicle was dressed every two or three days, changing the Aristol as it became moistened. The pedicle shrivelled and came away on the seventh day after the operation without odour or suppuration. Highest temperature 38°.1, and pulse 120, for a short time on the third day.

I was absent from the hospital for a fortnight and left the patient in the care of the interne. When I returned, a month after the operation, there was a small sinus extending from the site of the drainage tube to the depression occupied by the pedicle, just underneath the skin. This was cut out, curetted and packed with iodoform gauze, and the patient given permission to walk about. She left the hospital a few days later with the incision well healed.

The Delta-metal wire having served me so badly, I at once sent off for a new supply. When it came to hand it was tough and flexible, but a few months after, when I wanted to use it, I tested it again and it had so crystallised that when I attempted to bend it, it snapped into three or four pieces and was utterly unreliable. I was under the necessity of taking some copper wire of the proper thickness and rendering it flexible by heat. This is always reliable and answers the purpose well.

In the meantime Dr. Baer's and Dr. Polk's articles came out, and I resolved to adopt some of their plans in my next operation.

CASE II.—*Uterine Myoma; Abdominal Hysterectomy, Retro-peritoneal Method.*—Mrs. J., æt. 26. Puberty at 15; married at 20; has never been pregnant. Duration of tumour, two years since first noticed; growing rapidly of late. Operation on account of profuse menstruation and pain, unrelieved by treatment.

The vagina was prepared for operation by shaving the external parts, scrubbing the vagina with soap and mop and the external parts with brush. All was thoroughly disinfected with 1 : 1,000 solution of bichloride of mercury and the vagina packed with gauze wrung out of a solution of the same strength, the evening before and again the morning of operation.

Operation, 10th January 1893.—After the patient was fully under the anæsthetic, the tumour, which was wedged into the pelvis, was dislodged and pushed up into the abdomen. One of the ovaries was incorporated with the tumour, and hence oöphorectomy was out of the question and hysterectomy was at once decided upon. The tumour was turned out with Tait's screws. A ligature was placed outside of the ovary, tube and its fimbriated extremity, down to the uterus on the left side, tied and clamped next the uterus. Then another ligature down the side of the uterus was tied. The right side was treated in the same way. Then the limits of the bladder were outlined, and the anterior peritoneal flap begun an inch or so above it and dissected down to the cervix. The posterior peritoneal flap was made in the same way. The dissection of the anterior flap was easy and rapid. The peritoneum was firmly adherent to the posterior surface and the outer muscular coat was stripped down with it. A ligature was now placed within the flaps on each side, coming well down beside the cervix, and the anterior and posterior flaps joined by incising the tissues included in the ligatures close to the uterus and cervix. Ligatures were then placed on each side of the cervix, well down, and the tumour cut away. The cervical pedicle was trimmed, the cervical canal dilated, curetted and cauterised, and the four strands of the two ligatures on each side of the cervix passed through into the vagina. The ligatures in the broad ligament and those within the peritoneal flaps were cut short. Then taking a chromatised catgut suture and a short curved needle, commencing on the left side, the peritoneal edges of the broad ligament stump were whipped in and sewn with a running stitch till the peritoneal flaps were reached. The edges of these flaps were turned in and a continued Lembert stitch used till the stump of the broad ligament on the right was reached, when it was treated as the left side had been. There was thus a continuous suture from side to side across the pelvic floor and no raw surface presenting. Traction on the ligatures within the vagina drew this deep into the pelvis and the abdominal incision was closed.

It will be seen that some points from POLK, CHROBAK and BAER were incorporated into the technique of this operation. A ligature was placed within the folds of the peritoneal flaps, securing the vessels at the side of the uterus and cervix, after BAER. Instead of CHROBAK's drain, the ends of the cervical ligatures were turned through the cervical canal after POLK, and the peritoneal flaps closed after CHROBAK.

The tumour, uterus, ovaries, tubes and fimbriated extremities were removed *en masse*. The tumour was a solid fibroid, occupying the fundus and surrounded by uterine tissue as a calyx encloses a flower bud, and weighed 1¾ ℔. The cervix was amputated ½ inch below the inner os.

The patient had a rapid and uneventful recovery. The bowels were moved the third day. The cervical ligatures came away on the seventh day, and the patient was up and walking about the hospital on the twenty-first day after the operation. It was an easy matter to dilate the short cervix and wash out with a glass tube, which was done every day. The discharge was slight, and the subsequent care was so much less and so much more acceptable to the patient than the fussy dressing in sight on the abdomen, and gave such satisfaction generally that I shall use this method hereafter when possible.

CASE III.—*Uterine Myoma; Abdominal Hysterectomy, Retro-peritoneal Method.*—Mrs. K., æt. 42. Married at 15; puberty at 17; had one child at 22 and one abortion six years ago. She has had profuse menstruation since abortion. She noticed a tumour some two years ago in the lower part of the abdomen. Operation performed on account of profuse menstrual discharge, continuous sanious discharge and pain.

Operation, 23rd March 1893.—The left ovary was spread out over the tumour and incorporated with it, and oöphorectomy out of the question. The technique of the operation was essentially the same as in the previous case. The peritoneum was closely adherent to the uterus and cervix, both anteriorly and posteriorly, and was dissected off with the outer layer of the muscular tissue. The tumour weighed 2½ ℔. It was submucous, occupying the left side and fundus; there was also a smaller fibroid anterior and subperitoneal, and a third submucous and within. The recovery of this patient was also uneventful. She was up on the twenty-second day after the operation.

CASE IV.—*Uterine Myoma; Abdominal Hysterectomy, Retro-peritoneal Method.*—Mrs. H., æt. 50. Puberty occurred at 15; was married at 22; has had three children and one abortion. Operation performed for continuing profuse menstrual discharge and pain. There was an ill-defined boggy mass on the right side.

Operation, 13th April 1893.—The technique was essentially the same as in the previous two cases. The mass on the right proved to be a plexus of distended veins and two small fibroids, requiring an extra ligature to secure them. The ligatures were placed outside and they were removed with the tumour. In tying, one of the ligatures broke—a No. 12. I use Nos. 10, 12 and 14, braided "pure English silk." They are all tested before operation. I have never broken No. 14 even under the stimulus of the operation. The tumour consisted of four soft fibroids, weighing 1 ℔. One larger submucous, lateral and posterior; another subperitoneal and superior; and two smaller ones along the side of the uterus and underneath the right ovary and tube. The arteries were numerous and large on this side.

The recovery was interrupted by a little incident on the seventh day. The patient was taken suddenly with severe abdominal pain. The muscles became rigid, the temperature ran up to 39°.6 and the pulse to 110. A hypodermic injection of morphine was given (I use morphine only in very exceptional cases in laparotomy); a cathartic enema was administered and ice was packed on the abdomen. The patient soon became easier, the temperature sank to 38°, the pulse to 95, and she was again comfortable as before. The whole disturbance did not cover more than three or four hours. No assignable cause was discovered. She was on her feet on the seventeenth day after the operation.

CASE V.—*Carcinoma of Uterus; Abdominal Hysterectomy, Retro-peritoneal Method.*—Mrs. O., æt. 56. Puberty occurred at 14; was married at 19; has never been pregnant; menopause at 37. Patient noticed a tumour in the lower abdomen some 18 months previous. It has gradually increased in size and extends up to the umbilicus. She has had some discharge. No bloody discharge till after my examination four days ago; at that time there was a little blood lost from manipulation. Operation advised on account of continued growth of tumour and increasing pain. Diagnosis: probably a fibroid tumour, but might be a cancer; final diagnosis reserved till operation.

Operation, 2nd May 1893.—When the abdomen was opened the tumour was seen to be symmetrical, pear shaped, extending above the umbilicus, the peritoneal covering slightly œdematous and of a pale pink hue, and was at once pronounced cancerous. The tumour was so soft that Tait's screws would not hold, not even when grasped short and used as a lever. I was under the necessity of enlarging the incision upward, inserting my hand beneath the tumour, turning it up edgewise and thus delivering it. The tubes on each side were cystic and as large as sausages, the one on the right side 4 inches and that on the left side 6 inches long. The technique after this was essentially the same as before described. The ligatures were placed outside the cystic tubes, so the tumour, cystic tubes and ovaries were all removed *en masse.*

The bladder was lifted by the tumour some 3 inches above the pubes. Its border was outlined by a sound, and a crescent-shaped incision made in the peritoneum about 1½ inch above it. The separation of the peritoneal flaps was readily done. The tumour bulged out low down on the left side. After the posterior peritoneal flap was stripped down and as the cervical ligature was being inserted, it burst open on the left side, low down, and the *débris* and the cancerous juice from the interior escaped into the pelvic cavity. The ligatures were rapidly tied, the tumour cut away and the pelvis thoroughly sponged.

In suturing the peritoneal edges of the broad ligament stump one of the ligatures was seen to have partially loosened. Its loop had been taken too long and it did not securely hold. It was replaced and the abdomen closed.

The tumour weighed 3½ lb. and was so soft and friable that it would not bear its own weight when suspended by the hook of the steelyard, and had to be suspended in a cloth to be weighed.

The patient did well for two days, when symptoms of peritonitis (septic?) began to manifest themselves, and she gradually lost ground and died. The tissues were not sound and healthy, they had lost their tone and recuperative power; but still the *débris* and cancerous juice spilling into the pelvic cavity were most probably the cause of the peritonitis.

While this paper is being prepared an article by Dr. LANPHEAR, of Kansas City, appears in the *Annals of Surgery*, in which he claims that his method of operating possesses some special advantages. The special points of technique that he lays stress upon are (1) turning the tumour on its edge, clamping the broad ligament next the uterus, setting the ligatures, and then cutting between them, first on one side and then on the other, through the abdominal incision, with the tumour and uterus *in situ*, and (2) then delivering the tumour thus partially freed from its attachments; and after he has made the anterior and posterior peritoneal flaps, he inserts his finger into the vagina, and (3) upon his finger as a guide he makes an incision into the vagina anterior and posterior to the cervix, then passes a pair of broad ligament forceps and clamps the uterine vessels on each side as in vaginal hysterectomy, cuts away the uterus and closes the peritoneal flaps over the forceps, which are removed after 24 or 36 hours. He claims that by this method the time consumed is much reduced. He seems to me to minimise some of the points of difficulty in the operation and over-extol some of those of his own device. The operator who first clamps the broad ligament and then sets his ligatures and ties will occasionally find them loosen and hæmorrhage result. He must take a narrow bite with his ligature or leave the tissues free to be firmly compressed as the ligatures are tightened.

I have made inquiry, but have not been able to ascertain that the operation of abdominal hysterectomy has been performed in Japan elsewhere than in the Choshun Hospital.

THE INFLUENZA EPIDEMICS IN FOOCHOW.

By T. B. ADAM, M.D., C.M.

ATTENTION was first called to the existence of influenza in Foochow in March 1890 by an outbreak in the schools of the American Methodist Mission. A large number of the pupils and one of the foreign teachers were attacked. The latter I attended. A sharp attack of fever, attended by frontal headache, was followed by great prostration, and for fully a month thereafter the patient was troubled with nervous headaches. The girls' school is situated in a separate compound from that of the boys', and about ¼ mile distant. Both schools are in the midst of the foreign Settlement. Early in April the English Mission girls' school, also in the Settlement, was invaded, and two-thirds of the pupils and one of the lady teachers were sick with influenza. In the first week of May I was called to attend a lady of the American Board Mission, living within the native city, 3 miles distant from the Settlement. She presented typical symptoms of the neurotic type of influenza. Her illness was speedily followed by that of her child, husband and amah. The American Mission station at Ponasang, half way between the native city and Settlement, was next visited by the epidemic, and a few days later an outbreak occurred in the English Mission college and boys' school, situated close to the Settlement. Outside of the missions, five foreigners suffered from influenza in May and one in June.

In all these cases the onset of the disease was sudden, closely simulating a sharp attack of ague. An initiatory rigor or feeling of chilliness was succeeded by a fever of one to three days' duration, followed by prostration, from which recovery was slow. No sore throat was complained of, and bronchial catarrh only occurred in two of all the cases that came under my notice. Treatment consisted of a dose of calomel followed by a few doses of quinine. All made good recoveries.

Nothing more was heard of influenza until November, when a resident who had been on a visit to Shanghai, where the disease was again prevalent, returned to Foochow incompletely convalescent from an attack and suffering from severe bronchial catarrh. He made a slow but good recovery. No further cases came under notice until January 1891.

A brief sketch of the sequence of cases in the January epidemic will, I think, afford conclusive proof of the spread of influenza by actual contact.

January 5th.—I was called to attend A., and found him suffering from a sharp attack of influenza. 6th.—A.'s mess companion, B., sickened. 7th.—A. and B.'s domestic attendants down with influenza. 8th.—C., a friend who had called to see A. and B. the previous day, reports himself sick. 9th.—I fell ill. It must be noted that no other cases of influenza occurred in the community outside of those I detail. C. communicated the disease to three friends who visited him. My illness was followed within a few days

by that of my wife, two children, amah and house-boy. A playmate of my son's, who frequented the house, also fell sick, his illness being shortly followed by that of his mother. Only three other foreigners suffered from influenza in January, two of the cases being reasonably traceable to the group of cases detailed above.

In February the American Methodist Mission compound was revisited. The pupils were home for the Chinese New Year holidays. Eight of the foreign staff were attacked, one after the other, by influenza, including the mission doctor and nurse. A missionary in perfect health, on the eve of starting off for a country trip, "looked in for a minute" to see a brother missionary sick in bed with influenza. A few days later news came to hand that he was stricken down with influenza in a country station. An English Mission lady, living in the American compound, had a mild attack. A lady friend of her mission visited her one afternoon and as a consequence was sick in bed next day with influenza. Her friend and nurse sickened on the following day.

Influenza as experienced in January 1891 was a much more serious disease than in the spring-summer epidemic of 1890. A.'s case may be briefly detailed, as characteristic.

January 5th.—Felt sensation of chilliness, aching all over body, and complained of severe frontal headache and sore throat. Temperature in evening, 102°.

6th.—Temperature 102°.5. Headache very severe. Tonsils are much inflamed.

7th.—Temperature 103°. Headache and sore throat slightly relieved.

8th.—Temperature normal. Headache gone. Feels excessively weak. Throat less painful. Has cough with feeling of soreness in chest.

9th.—No fever. Suffers from bronchial catarrh. Feels "good for nothing." Remained for a few days after this in a warm room, nursing his cough and slowly picking up strength, then imprudently went out one afternoon and had to return to bed for a week with a sharp attack of bronchitis. Strength returned very slowly and fully a month elapsed before convalescence was complete.

In my own case the attack was ushered in with a severe rigor, and a feeling of chilliness continued for about 12 hours.

Fever usually lasted from one to three days. In two cases it continued for a fortnight. Temperatures ranged from 100°.5 to 105°.

Headache was present in all cases—an aching frontal headache, persisting as, a rule, until fever left. No special complaint was made of the eyes by any patient, and nothing was observed to support Dr. BEZLY THORNE's theory of the conjunctiva being the point of invasion of the disease.*

Nervous System.—Prostration, well marked, was characteristic. For at least a week after fever left patients felt "good for nothing." In the case of a child of 4, partial paralysis of lower limbs occurred. On attempting to walk the little fellow repeatedly fell, and for two days he was exceedingly wroth with his legs for failing to carry him. Sleeplessness was a feature of many cases. Convulsions accompanied the fever in the case of a child of 2 years.

Bronchial Catarrh was an almost universal sequela—or, more correctly, feature—of the winter epidemic. In several cases the bronchitis was very severe and accompanied by profuse expectoration. Much relief was obtained from poulticing.

Sore Throat was a very general symptom, the inflammation varying from a mere redness of the fauces to severe tonsillitis. Experience seemed to prove that vigorous treatment of

* *Lancet*, 4th January 1890.

the throat symptoms, with chlorate of potash gargles, lessened the severity of the subsequent bronchial catarrh.

Nasal catarrh was generally, but not universally, present.

Ear-ache was a sequela in four cases.

In no case was any eruption observed on the skin.

A break of warm summer-like weather occurred in February, and I noted that patients then sick with influenza got over their attacks with very slight catarrhal symptoms. It would appear from this observation, and the experience of the spring-summer epidemic of 1890, that in the state of nervous prostration following the fever the mucous membranes are rendered exceedingly prone to inflammation, and the presence of cold weather is the determining cause of the bronchial catarrh.

In the foregoing notes I have not dealt with influenza as affecting the natives of Foochow city and surrounding villages. From the report of missionaries it is evident that the epidemic spread throughout the province of Fuhkien. In the winter epidemic the mortality amongst the old and very young was great. I saw many severe cases, but they were all so complicated by the insufficient diet and miserable surroundings that other than fatal results could hardly have been looked for. A large mortality among pigs occurred during the course of the epidemic. Several of the foreigners' ponies suffered from symptoms sufficiently suspicious to raise the question whether they were not victims of influenza.

ON MR. J. T. ROE'S THEORY THAT INFLUENZA IS ENDEMIC IN CHINA.

By JAMES CANTLIE, M.A., M.B., F.R.C.S.

IN the continent of Asia reports of the prevalence of influenza have been made from Siberia, Thibet, Tonkin, Singapore, Penang, China, India and Japan, in the order given.

In Hongkong we have not been without diversity of opinion as to the name. In fact, one or two medical men refuse to recognise the disease which has prevailed here as influenza. We have had a repetition of names such as one sees in the medical journals—"dengue fever," "fever with rheumatic pains," "fever with epidemic catarrh," and such like. This is one sure proof, if such were needed, that we have had influenza, as the presence of the disease has provoked similar contentions in all parts of the earth.

But a peculiar interest attaches to influenza in China. The Russians call it a Chinese disease, and, for aught we know to the contrary, they may be right. Whether they merely regard the present epidemic as arising there, or whether they regard the disease as endemic in China, I have not yet been able to ascertain. It may merely be that they called the disease Chinese in the same way as the people in Western Europe called it Russian influenza and the residents in Hongkong called the second visitation of the disease Shanghai influenza, and so on. The disease, in fact, is named, as many others are, from the last place it comes from, irrespective of the real origin.

But an attempt has been made to focus influenza upon China.

In a paper read before the Balloon Society influenza is regarded as peculiarly a Chinese disease. The statements are referred to by numerous London papers, and in the Hongkong *Daily Press* they are commented upon as follows:—

Mr. JAMES THORNE ROE, C.E., at a recent meeting of the Balloon Society, read a paper in which he contended that influenza is a Chinese marsh fever. The lecturer illustrated his theory by referring to the Yellow River, which is 2,400 miles in length, and which he contended was the real home and seat of the disease. Its inundations, he said, caused the deposit over an immense tract of country of the insanitary filth of populous cities and towns, and to this must be added the calamity of 1887, caused by the bursting of its embankment, burying in the mud entire villages with their "millions of inhabitants." "Would not," Mr. ROE proceeds to inquire, "the effluvia and dust arising, often in the minutest particles, which exhale from putrefying animal or vegetable substances, be sufficient to infect distant lands, providing the air current and weather were favourable for conveying these poisonous vapours or the particles of pulverised mud charged with these germs of disease?" In support of this idea the lecturer quoted the eruption of Krakatoa volcano in August 1883, the cloud of dust from which is reported by the Committee of the Royal Society to have passed three times round the globe. From this fact the lecturer argued the connexion between the countries of the West with the marshy districts of China, the fever germs from which undoubtedly float in the air and may travel indefinitely. He thought, moreover, that these germs sometimes arrive in a dormant state, mild weather imparting to them life and energy, and they would probably thrive best in low or marshy districts and on the banks of rivers.

The writer goes on to say—

All this sounds plausible enough, but we should like to hear what the members of the medical profession practising here and in the Treaty ports have to say on the subject. Does the so-called influenza possess any great affinity to the fevers prevalent here and in China? If so, how is it that the disease has become epidemic in the Western world when here it is only sporadic?

It is the statements made by Mr. ROE and the comments made by the local press which it behoves us to answer, and I propose to do so by attempting to excite discussion on the subject.

On instituting an inquiry we have to decide—

I.—In the opinion of medical men, has influenza visited China at all, and when?

The per-centage of opinion, judging from the belief entertained by civil, military and naval men in Hongkong—and we can take it as a specimen of the scientific belief in China,—is about 80 per cent. "ayes," 20 per cent. "noes."

So it must be said when put to the vote, we have had influenza. Further, the "noes" qualify their opinions by stating, "We have had fever with catarrh," and the medical staff, whilst on the one hand rejecting the name influenza, dub it "epidemic catarrh." But epidemic catarrh is the synonym for influenza given in the nomenclature of disease of the College of Physicians. These and such-like are the result of local hitches in professional opinion and relations which occur everywhere and cause an attempt at a difference in name when there is none in belief. So that actually all medical men in China admit as a scientific fact we have had influenza.

II.—The next point to be settled is: when did the epidemic appear in China? Did we have it in 1890?

Certainly; both on shore and afloat it was prevalent. When the flagship of the Chinese squadron was lying in Hongkong Harbour in March 1890, 147 of the crew were suddenly seized with the disease. Was influenza present in 1889? Yes, but sporadically. Was it known in 1888? Here is the crux by which an important tale may hang. In September and October 1888 a disease existed in Hongkong which puzzled the local practitioners. It was called "fever with rheumatic pains," "a variety of dengue," "a variety of German measles" and so forth.

I read a paper on the subject before the Medical Society, but no progress was made at the subsequent discussion as to a definite name. The paper was laid aside, and in the month of June 1891—*i.e.*, three years after—I took it up again and read it through, and to my astonishment found an exact account of influenza as we now know it. This is a most important paper, as it is the first written record of the modern epidemic of influenza.

If there is any value in unprejudiced evidence it is to be found in such a record. Here was a paper written during the epidemic of an unknown disease, stating clinical facts merely. The facts were arranged and needed a name, but none was forthcoming until three years afterwards, when, from collateral evidence in other parts of the world, it was found to be influenza we were dealing with. No one can gainsay the fact that we had influenza in Hongkong in 1888.

III.—How did the epidemic travel?

In 1888 we had the disease in Hongkong. The next time we hear of it is in Russia, in the following year—1889,—and in 1889–90 in England. Then an intermission occurred, and again, in 1891, the disease appears in England, after 10 months' cessation. Noticing the dates carefully, we see that at least twice has the disease visited Britain—1889–90 and 1891. The dates in Hongkong and Britain have been—

Hongkong, 1888;	Hongkong, summer of 1890;
Britain, 1889–90;	Britain, spring of 1891;

the appearance of the disease in Hongkong preceding the appearance of the epidemic in Western Europe.

Moreover, the second outbreak in Hongkong came by way of Japan and Shanghai, so much so that many called it "Shanghai" influenza or "Japanese" influenza. Again, the disease appeared in Japan subsequent to its travel across America, and the Pacific steamers were held by the Japanese guilty of its introduction. Thus it appears to have left China in 1888, travelled across Siberia to Europe in 1889, reached America, and appeared in the Far East again in 1890. In 1891 it again attacked the Russians, and subsequently Western Europe. It thus appears that it travels from east to west and that it has gone twice round the world. That it has finished is not by any means certain. The dust from Krakatoa travelled thrice round the world from east to west; and if particles of dust can thus be carried round the earth, how much more conceivable is it that "fomites," the "microbes," the "influence," the "chemical condition of air," or whatever in our ignorance we choose to term it, may journey longer. That the method of travel in previous epidemics was such, we know. Nothing is more convincing than the account of a fleet of five men-of-war crossing the Atlantic in the beginning of the present century, from the West Indies to England, when three-fifths of the crews were prostrated by influenza which was then prevalent in England, and, further, that a few days subsequent to the occurrence the disease appeared in America. So that from east to west seems to be the course hitherto pursued, and the present epidemic is no exception.

Dr. PARSONS's Report to the Local Government Board deals with many theories. He declares that the disease travelled from east to west, and concludes, therefore, that the wind has nothing to do with it, as it frequently blew in an opposite direction, and ascribes contamination to human intercourse. How did the ashes of Krakatoa encircle the earth thrice? Surely the winds do not blow in the same direction all the time? And if solid particles of dust can be thus made to travel, how much more easily might germs (?) do so. Dr. PARSONS seems to have forgotten that the revolution of the earth is constant and in the direction mentioned, the course of the wind local and variable, and most diseases which spread by atmospheric contagion follow the course of the Krakatoa dust. The fine particles of dust may have attained a height where the lower air currents were impotent, and as they gradually deposited, the revolving earth was besprinkled with them in the sequence of its process of revolution.

IV.—Is influenza endemic in China?

We are now face to face with Mr. ROE's contention that influenza is endemic in China. Mr. ROE states that influenza is a "marsh malarial fever." I believe that is one reason why

the medical profession in China has been so slow to diagnose the disease. Malarial fevers are ever associated with aches and pains, and they run an erratic course of hours, days or weeks. It is among the latter class that we have to search for influenza; but so close is the affinity between the symptoms we know of as peculiar to local fevers and influenza that almost our only means of recognition is by the catarrh. Now, catarrh is met with in less than half the cases in Europe and is not a necessary accompaniment of the disease. We must lay aside at once the belief, as Dr. PARSONS says, that the epidemic which has just raged is merely an exaggerated form of bronchial catarrh or influenza cold. But amidst the multiplicity of forms of fever which one is accustomed to see, I repeat it is difficult without the presence of catarrh to diagnose influenza as distinct from some vagaries of the local malarial fever one meets with. But if catarrh and lung complications are not usual accompaniments in Britain, how much less are they likely to be in South China, where the climate lessens the risk of lung troubles to a great extent, compared with that of a colder climate.

All this proves that not only has influenza been present, but, as few doctors of my acquaintance would acknowledge its presence *until catarrhal symptoms showed*, I believe I am right in my conclusion that not more than two-fifths of the cases of influenza were diagnosed by us. The affinity between some forms of fever and influenza without catarrh is such that, not only now, but when influenza is not brought home to our minds by existing in an epidemic form elsewhere, many cases occur which it is impossible to classify or pronounce as different from influenza as we now know it.

V.—The Huang-ho or Yellow River mud theory.

Mr. ROE contends that the basin of the Yellow River is the birthplace of influenza, and from thence it travels as from a centre. It would not be exceptional were such the behaviour of this disease. Cholera, for instance, is endemic to certain districts in India, whence it occasionally spreads over the whole world. Typhus fever, a disease known to be caused by overcrowding, has many times spread from overcrowded centres and become diffused far and wide in country districts. So far, then, reasoning by analogy, there is nothing improbable in the idea of a region where the disease is endemic.

Unfortunately, I have no experience of the diseases prevailing in or about the basin of the Yellow River; and if this article can but bring to their pens some of the medical men who have experience there, it will have done much towards elucidating the subject and giving Mr. ROE the "yea" or "nay." But the writer must be wary in his record. He must compare the form of "fever" met with in the neighbourhood and that experienced elsewhere either by himself or others. He may, if experienced elsewhere, put down what he meets with in the Yellow River region as one of the many varieties of "malaria." The forms of local fevers met with are of endless variety. Were it not so we should not hear such names as "Gibraltar fever," "Malta fever," "Cyprus fever," "Roman fever," "West Coast fever," "Hongkong fever," etc., all of which vary in type, but are classed now as arising from organic poisoning or from malaria. "Fevers" in South China are but seldom aguish in character. A person coming, for instance, from Mauritius to Hongkong has "rigors with a cold period" with his first recurrence of fever, but less so than in Mauritius; with the later recurrences the cold period gets less

and less, until by the fourth attack the fever has become of the usual Hongkong type, with no rigors and a cold period slight or unnoticeable.

Now, in the vast length of China fevers must vary according as they are met with in the tropical, subtropical or temperate zones, and to class them all as malaria shows how little is known about the genesis of fever. Hence I say the recorder of disease has to be careful that he is not dealing with a disease which is unlike that met with anywhere else. "Malta," "Roman" and "Cyprus" fevers behave differently, closely as they are allied geographically. How much more are differences to be expected in the area of China.

This is preliminary really to the statement I now make as to the appearance of influenza in Hongkong. On talking with a doctor of 25 years' experience in Hongkong and Macao concerning influenza, he said that it was "nothing new here," that he had many times seen the disease before—in fact, that he was not aware that a year passed without his having known cases. He was content to classify them as a "form of dengue." However, when the disease came to be classified as influenza, he was surprised at the new name, but readily styled it influenza to be in harmony with others, but not because it was of a different type to what prevailed before. At times during the last 25 years it has become epidemic, as in 1888 and 1890, but that it has been present in Hongkong and Macao in sporadic forms, and at times in prevalent forms, he is convinced.

My experience of five years fully corroborates every word as above stated. In 1887 fever to such an extent prevailed in Hongkong that the Government appointed a Commission to inquire into it. A different type prevailed in 1888, and in each successive year the type of fever has varied from its predecessor. I am not aware that such is the case elsewhere than in China. The "fever" of a place is generally well marked, and the treatment by the people a matter of daily life. But not so in South China. Fevers have no type here; they are polymorphous.

Certain it is we have many forms, certain also that we have malarial fever to deal with, and admitted it must be that we have occasionally prevalent, and sporadically always present, a disease which is allied to "dengue fever" but which resembles influenza as we now know it. Influenza is combatted by the usual malarial remedies, and it is fair therefore to assume that a malarial element may be present.

No disease is known to assume so many forms as influenza. A disease that can give rise, either primarily or secondarily, to fever, pains of an excruciating nature resembling dengue only, headaches at times considered as neuralgia, lumbago, rheumatic pains in limbs, skin eruptions, jaundice, diabetes, diarrhœa, peripheral neuritis, Bright's disease, pneumonia, paralysis of individual muscles, aphasia, spinal meningitis, cerebral lesions of many kinds, and numerous other affections is a type which cannot be neglected during any illness within the last three years.

The forms of malarial fevers in China are almost as varied and variable as are those of influenza, and amongst the number it behoves us to note whether Mr. ROE's contention, "that influenza is endemic in China," is correct or not. I have stated the argument fully, so that there may be no doubt of my meaning, and have done what I can to attract discussion by adopting Mr. ROE's views. No communication has been sent to the medical journals from China on the existence of influenza, except from Hongkong, and this makes one all the more interested in the matter. Every corner of the earth has reported the disease except China.

What does this mean—the non-existence of the disease? Not so; even the Chinese recognise its presence, and have specially devised medicines to cope with it. Is it that the disease is constantly present with us in some form, and complicates ordinary malarial fever? The latter would explain the tardiness of the foreign medical practitioners in China to admit the disease.

The position of the renunciants of influenza is as follows:—Has there been influenza in China?—No. Has all the rest of the world had it?—Yes. How do you explain its absence from China? ———.

The answer from Mr. ROE's standpoint is that "you have it always with you and it complicates your diseases to such an extent that a slight increase in its prevalence does not strike one as exceptional as in other parts of the world, and merely goes by the name of 'fever,' without the qualifying word even of malaria."

Thus I have taken upon myself to invite discussion on this subject from the only source where Mr. ROE's statement can be answered scientifically. The matter must be discussed with an unbiassed clinical mind. Neither the absence nor presence of "bronchial catarrh," nor a "rash," the most evanescent, unreliable and variable of all the accompaniments of influenza, is to determine the matter.

These warnings I would specially repeat, as such signs and symptoms are those readily seized upon by the superficial observer as the means of diagnosis. Finally, I have to record that the same disease I recorded in 1888, but could not name, is here in Hongkong now—September 1891; and should I venture to prophesy, I should say that influenza has not yet completed its travels, and that its presence here now will be followed by its appearance in more westerly countries.

Failing the fulfilment of the prophecy, it is a proof that we have but to observe and we shall find that the disease is endemic in China and that Mr. ROE's theory is so far correct.

As I forward this paper influenza has again appeared in Moscow.

[The Berlin Hygienic Bureau has published the following facts relating to the influenza epidemic of 1889–90:—

Influenza in epidemic form was recognised in June 1889 in Turkestan and reached Eastern Russia (Kiakhta) in the middle of October. On the 28th October it broke out in Western Siberia and advanced eastward, reaching Japan in January and Hongkong in February 1890. Its course westward was more rapid. Moscow was attacked in November 1889, and St. Petersburg a fortnight after Moscow. The capitals of Sweden, Denmark, Germany, Austria, France and England were reached by the end of November or beginning of December, while Buda-Pesth, Brussels and Madrid were not invaded before the middle of December. On the 19th December it reached New York, and showed itself at the end of the same month in Milan, Rome, Naples, Constantinople, Canada, Morocco and in several States of the American Union. By the middle of January 1890 influenza was raging at Turin, in Algeria and in Egypt. A fortnight later it broke out in Central and South America. Eastern Africa was not attacked before the end of March, but Bombay was attacked by mid-February.]

DR. ALEXANDER JAMIESON'S REPORT ON THE HEALTH OF SHANGHAI

For the Half-year ended 30th September 1891.

THE half-year just closed may be divided into two periods—one of unusual drought, the other of unusual humidity. The former would comprise the months from April to July; the latter, August and September. In April there were a few groups of a couple of days each during which showers fell; in May the total rainfall was 1⅓ inch; in June there was but one heavy downpour, the rainfall for the month being less than one-third of the average; in July there were but seven rainy days. On the other hand, more than double the average amount of rain fell in August, while September was marked by brief torrents, which, though separated by perfectly dry intervals, brought the total amount registered to 10 inches.

The atmosphere was in almost constant disturbance. April and the first week of May were very stormy, with frequent growling of distant thunder. After a heavy dust-storm on the 5th May the weather was relatively calm round Shanghai itself, where we had but little share in the storms on the coast. The same may be said of June, in which month there was but one tempest. This burst over the Settlements on the 23rd, which was the hottest day of the month. The great triple typhoon of the 18th July will long be remembered. It had been preceded and was followed by violent storms on the coast, which prevailed up to the end of September; but although August was tempestuous, no great disturbance reached Shanghai except the typhoon of the 1st and 2nd September, which was accompanied by a remarkable, though temporary, fall of temperature. As regards heat, the summer months were by no means exhausting, the temperature having no doubt been kept down by the rapid circulation of great masses of air evidenced by the storms which prevailed all along the coasts of Japan and China. April, May and the first half of June were mild and equable, with an occasional hot day. The maximum for April was 83° F. (11th), the minimum, 39° (8th). The mean for May was 68°, the difference between the maximum and minimum daily mean having been only 19°. The maximum registered in May was 89° (10th), the minimum, 47° (17th). The latter half of June was hot but variable, and this period was followed by a cool first week in July, so that summer, in the sense of persistent hot weather, did not begin until about the 10th July. The highest temperature registered in June was 96° (23rd), the lowest was 60° (4th). The maximum for July was 97° (24th), the minimum, 69° (4th). The first half of August was oppressive, but mild weather began on the 16th, and after that date the day temperature was moderate. The nights, however, continued hot until the middle of September, and this rendered the season much more exhausting than would be anticipated from a perusal of the temperature registers. The maximum recorded for August was 96° (12th), the minimum, 70° (22nd); the maximum for September was 86°.5 (7th), the minimum, 56° (30th). In general terms, the summer months were cool, dry and windy.

DEATHS of FOREIGNERS from 1st January to 30th September 1891.

CAUSE OF DEATH.	JAN.	FEB.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPT.	TOTAL.
Small-pox	1 1*	1*	...	...	...	...	...	...	...	3
Typhus fever	...	1*	...	...	...	...	...	...	...	1
Enteric fever	...	1†	...	...	...	1	1	...	...	3
Diphtheria	1†	...	1†	...	...	1†	...	...	...	3
Whooping-cough	...	...	...	...	...	...	...	1†	...	1
Tuberculosis	1	...	...	...	...	...	1	...	...	2
Phthisis	3*	...	...	...	1*	1	1*	...	...	6
Cancer	...	...	...	...	...	...	...	1	...	1
Bright's disease	...	...	...	1	1*	...	1	...	1	4
Cholera	...	...	...	...	...	...	...	4 2* 4†	3 5*	18
Meningitis	1†	...	...	1†	1†	...	1†	...	3†	7
Apoplexy	1	1	...	...	...	...	1	...	...	3
Heat apoplexy	...	...	...	...	...	...	2	...	...	2
Convulsions	1†	...	...	...	...	...	...	...	1†	2
Epilepsy	...	...	...	...	...	...	...	...	1	1
Melancholia	...	...	...	...	...	...	...	...	1	1
Alcoholism	...	...	...	1	...	...	...	...	...	1
Heart disease	...	...	...	1	...	...	...	...	...	1
Laryngitis	...	1†	...	...	...	...	...	...	...	1
Bronchitis	...	1†	...	...	...	...	...	...	...	1
Pneumonia	2*	...	1*	...	...	...	...	...	...	3
Peritonitis	...	1†	...	...	...	...	...	...	...	1
Dyspepsia	...	1†	...	...	...	...	...	...	...	1
Diarrhœa	1	...	...	1	...	...	1†	1 1†	1	6
Dysentery	...	...	...	...	...	1*	...	1	...	2
Obstruction of bowels	...	...	...	...	...	...	...	...	1†	1
Hepatitis	...	...	...	...	...	...	...	1	1*	2
Abscess of liver	...	...	...	...	1	...	...	1	...	2
Pyonephritis	...	...	...	...	...	1	...	...	...	1
Albuminuria of pregnancy	...	...	...	...	...	1*	...	...	...	1
Puerperal fever	...	...	...	...	...	...	1	...	...	1
Umbilical hæmorrhage	1†	...	...	...	...	...	...	...	...	1
General debility	...	1†	...	...	...	...	...	...	...	1
Asphyxia	...	...	...	...	...	1	...	...	...	1
Poisoning	...	...	...	...	...	...	...	...	1*	1
Gunshot wound	...	1	...	...	...	...	...	...	...	1
Suicide	...	1	...	...	1	...	...	...	...	2
Drowning	...	...	...	...	1*	1*	1†	1*	...	4
Not certified	...	...	...	...	...	...	1	1*	1*	3
TOTAL	14	11	2	5	6	8	12	19	20	97

* Not resident adults (28). † Infants (28).

Two adults died from enteric fever, but, judging by my own experience, I am of opinion that the disease was neither severe nor widespread. On the other hand, malarial fevers and vague disorders, yielding readily to quinine, were extremely prevalent. That ill-defined affection "influenza" was common enough, the diagnosis in my practice being usually made and insisted upon by the sufferers themselves. A cholera case occurred in a foreigner as early as May, and the last death among foreigners from this cause for the year was recorded in November. The disease raged among the Chinese, and, there can be no doubt, is now endemic in Shanghai. Only one death is attributed to dysentery, although that affection in a moderately severe form and ordinary diarrhœa were constantly under observation, especially in July, August and September. Three deaths were due to inflammatory conditions of the liver; of these, two occurred among residents. A few cases of varicella occurred among children. Pertussis was

epidemic among the Chinese from May to July at least, during which months I saw a very large number of cases in native children living in widely separated parts of the Settlements. Foreign children suffered here and there from the disease, but among them there was nothing resembling an epidemic. Bronchitis and catarrhal throat affections were common, in spite of the dryness of the season. Phthisis accounts for one death among residents. It is still true, as has often been noted in these Reports, that almost all cases of phthisis are imported. Many cases of chronic alcoholism, and of the acute form necessitating confinement, were treated in hospital and in private. One death only is attributed to alcoholism during the period under review, but it cannot be doubted that excess in drinking largely increases the "morbidity" of the place and thus, indirectly, its mortality.

A most distressing and, indeed, appalling, group of events occurred during the cholera season of this year, by which a lady and her three children perished within two days.

The family in question, consisting of husband, wife and three children, lived in a well-built, airy house in a good situation. The house was kept scrupulously clean, and all ordinary precautions as to boiling drinking water, cleansing vegetables, and so forth, were matters of daily routine frequently, if not regularly, supervised.

Up to noon on the 2nd September the entire family was apparently well. At 2 P.M. a child, aged 2, was suddenly seized with vomiting and griping, followed by clear, watery stools containing green lumps (these lumps proved to be pieces of Chinese beans with which his amah had fed him during the forenoon), urgent thirst, cold surface covered with sweat, and collapse. The application of external heat, energetic friction and the administration of stimulants were kept up for 24 hours without any marked change in the condition. Then two convulsions, of short duration and unaccompanied by loss of consciousness, occurred. After these the surface became fairly warm, and the pulse, which from the beginning had been hardly perceptible, was noted as "100, soft and full." Next day vomiting had ceased, a little urine was evacuated for the first time, the stools (five in 24 hours) were large, watery, and still contained fragments of macerated beans. The surface had, however, again become cold, and no devices for restoring heat to it were of any avail. On the fourth day there was constant flow of serous fluid from the bowel; convulsive movements of limbs; teeth-grinding. Insensibility came on at 6 A.M., general convulsions four hours later, with death shortly after, 70 hours from the beginning of the illness.

On this day (5th September) the father was seized with a sharp attack of dysentery, which was treated by dieting and castor oil and laudanum, and lasted about a week. He was assiduous in his attendance on his family; but notwithstanding this, and in spite of the irritation of at least a certain portion of his intestinal tract, he did not at any time present any choleraic symptom. During the forenoon of the 6th September a second child, 1 year old, began to vomit and purge. Collapse came on rapidly, and he died in the evening. On the same day the third child, twin brother of the first, was in apparent health up to 4 P.M., when he returned from a tea party. All the other children at this party remained well. Immediately on getting home he vomited, and incessant serous purging set in at once. Three hours after the beginning of the attack he was pulseless, with cold, wet, cyanosed surface, excavated eyes, urgent thirst, extreme restlessness, hoarse cry and panting respiration. At 10 P.M. he became insensible, and died at 11 P.M. There were no convulsions.

While attending to this child, at 7 P.M. on the 6th September, the mother found herself suddenly drenched in perspiration, and violent purging set in at the same moment. She was seen a few minutes later, and was already cold. The diarrhœa was bilious up to midnight, when it became characteristically choleraic and involuntary. Vomiting was urgent up to 10.15 P.M. ($3\frac{1}{4}$ hours), when it stopped, and did not recur. There was a very brief and short attack of cramp in the calf muscles at 11 P.M. The skin all over the body was now livid; the pulse disappeared, and respiration, which had at first been comparatively little affected,

became shallow and rapid. Uncontrollable restlessness with apparent unconsciousness, broken occasionally by a short sudden cry, and a continuous flow of serous fluid from the bowel so that the bed was saturated, marked the last two hours of life. The patient died at 2.30 A.M. on the 7th September, 10½ hours from the commencement of the attack.

A case of Aphasia lately under treatment presents certain points of interest.

Three years ago a European male, aged 72, who had spent most of his life in China, and had always been remarkably healthy up to the age of 71, suddenly became aphasic. He had been in the habit of walking 5 or 6 miles daily until he was well past 70. Then he occasionally complained of sciatica and of hæmorrhoids, but he continued his daily exercise with but little diminution. He was not gouty. He had lately had much business anxiety. A medical man who saw him for some trivial ailment six months before the attack to be described noted that his pulse was "very strong, hammering." He had suffered recently from bronchitis with profuse expectoration. He had always been temperate in eating and drinking, and although his appetite was excellent and he took abundant nourishment, he had for some years, solely in consequence of bad teeth, lived chiefly on milk and soups, puddings and fish. He was in the habit of reading a great deal, chiefly the newspapers, and he took considerable interest in current events, social, political and commercial.

1st day.—He was known to have been apparently in his usual health at 5.30 P.M. A friend, who saw him two hours later, found him speechless, but understanding spoken and written words, and able to reply intelligently by signs to spoken or written questions. Whether he could write was not then ascertained. There was no paralysis of the limbs. He walked upstairs to bed, and with some assistance undressed himself. He then ate some dinner without any difficulty in deglutition. Complete control of sphincters. His pulse was said to be very soft and feeble. I saw him at 10 P.M., when he was lying on his left side in bed, sleeping quietly and breathing regularly, but with a slight snore and occasional puffing of the lips. I did not disturb him, but ordered ½-ounce doses of hazeline every three hours.

2nd day.—Had slept well. Found patient walking about his room. The left corner of his mouth was drawn a little upwards and outwards. When a pencil was put into his right hand he let it drop, either because he had lost recollection of its use or because he had lost the finer sensibility of his fingers. He moved his right arm freely, but the grip of his right hand was weakened; still he could take up whatever he required. He did not appear to understand either speech, writing or signs, and his hearing was dull. He was evidently neither surprised nor distressed by his inability to speak. He masticated and swallowed well. This morning he made signs to his servant, by fumbling at his pyjamas, that he wanted to urinate. Temperature 98°. The urine was in every respect normal.

3rd day.—Passing urine involuntarily. Bladder empty. The dragging of the mouth was more marked and the hand weaker. A good deal of his food was now running over his lower lip. In the evening he for the first time smiled and nodded a salutation.

4th day.—For the first time showed distress, or rather annoyance, at his inability to speak. The mouth was hardly distorted. The right hand was stronger; he was able to grasp with considerable force, but he used his left hand by preference for arranging his clothes, etc. When asked to put out his tongue he attempted to comply, but did not succeed. He had passed urine once or twice voluntarily.

5th day.—One involuntary stool, but no involuntary micturition. Mouth perfectly straight. When asked to protrude his tongue he got the tip of it just between his teeth, but could not advance it farther. There was no escape of food from corner of mouth. He had an excellent grip with the right hand, feeding himself with it. He obviously understood simple signs, but I could not get him to grasp the dynamometer.

6th day.—Lip movements perfect, but no attempt at speech made. When offered a newspaper, book, or paper and pencil he showed neither pleasure nor annoyance, but simply pushed them aside as though he had no idea of their use. Urination voluntary. He feeds himself with a spoon.

8th day.—Began to try to speak. Says "yes" and "no," but indistinctly. Could not protrude tongue.

10th day.—Recollected the use of pencil and paper. When a written question was placed before him he took the pencil as if to reply to it, made a scrawl, and seemed satisfied that he had replied. He did not attempt to reply by signs to simple written questions, which, in fact, he clearly did not understand.

14th day.—He understood simple spoken questions, such as "Have you had tiffin?" In answer to this he shook his head in decided negative. But when, after feeling his pulse at the right wrist, I said "Give me your left hand now," he looked blankly round, and then made a sign with his right hand, conveying that he did not understand.

17th day.—Up to this day he had been quite amiable, but now there was a sudden change of temper. He continued gentle and polite to his servants, but when visitors approached he made gestures to prevent their coming, and if they persisted he rose from his chair with a grunt of annoyance and went to another part of his room.

Incontinence of fæces, but not of urine, now set in and lasted for several months, when it disappeared. Three months after his attack his general health was perfectly good, and he had grown very stout. Got out a word occasionally, such as "yes," "no," "good-bye" (imperfectly), but could neither write nor understand writing. Understood any simple spoken question and replied by appropriate signs. All paralysis had completely disappeared.

Two years later there was no change, except that he showed an extraordinary memory for faces seen before his illness, and for names.

Thirty-two months after his attack, he being then 75, I saw the patient again. When asked to come in to see me he presented himself with a bronzed, ruddy complexion, walking rapidly and firmly into the room. He at once recognised me, and shook hands, giving me a grip which made my fingers tingle. He understood the questions which I asked him—as to his appetite, sleep, liking of his surroundings, etc.,—and answered without hesitation by appropriate gestures and by attempts at speech, which, however, did not get beyond "oh yes," "no" and "very well," the last indistinct. After a while he rose from his chair, shook hands again, and left the room with gestures of farewell.

He is still unable to speak or to write (aphasia and agraphia); he does not understand written words (word blindness), but he recognises any previously familiar object presented to him and correctly indicates its use; he also recognises the meaning of spoken names applied to objects, at least up to wide limits (absence of word deafness); he never makes any attempt at reading or looking at pictures. Meanwhile his nutrition is perfect; he sleeps like an infant; takes, for a man of his age, an extraordinary amount of walking exercise; and has complete command over both bladder and bowel. He never betrays the slightest surprise or distress at his condition.

CHINA.

IMPERIAL MARITIME CUSTOMS.

5-1699

II.—SPECIAL SERIES: No. 2.

MEDICAL REPORTS,

FOR THE YEAR ENDED 30TH SEPTEMBER 1892.

43rd and 44th Issues.

PUBLISHED BY ORDER OF

The Inspector General of Customs.

SHANGHAI:
PUBLISHED AT THE STATISTICAL DEPARTMENT OF THE INSPECTORATE GENERAL OF CUSTOMS,
AND SOLD BY
KELLY & WALSH, LIMITED: SHANGHAI, HONGKONG, YOKOHAMA, AND SINGAPORE.
LONDON: P. S. KING & SON, 12 AND 14, KING STREET, WESTMINSTER, S.W.
1895.

[*Price* $1.]

INSPECTOR GENERAL'S CIRCULAR No. 19 OF 1870.

INSPECTORATE GENERAL OF CUSTOMS,

PEKING, 31*st December* 1870.

SIR,

1.—IT has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to
- Season.
- Alteration in local conditions—such as drainage, etc.
- Alteration in climatic conditions.

e.—Peculiar diseases; especially leprosy.

f.—Epidemics
- Absence or presence.
- Causes.
- Course and treatment.
- Fatality.

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking. I have committed to Dr. ALEX. JAMIESON, of Shanghai, the charge of arranging the Reports for publication, so that they may be made available in a convenient form.

3.—Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr. ....., and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 30th September—that is, for the Winter and Summer seasons.

4— * * * * *

I am, etc.,

(Signed) ROBERT HART,
I. G.

THE COMMISSIONERS OF CUSTOMS,—*Newchwang*, *Ningpo*, *Tientsin*, *Foochow*, *Chefoo*, *Tamsui*, *Hankow*, *Tainan*, *Kiukiang*, *Amoy*, *Chinkiang*, *Swatow*, and *Shanghai*, *Canton*.

SHANGHAI, *1st May* 1895.

SIR,

IN accordance with the directions of your Despatch No. 6 *A* (Returns Series) of the 24th June 1871, I now forward to the Statistical Department of the Inspectorate General of Customs, the following documents:—

Report on the Health of Hoihow (Kiungchow) for the fifteen months ended 31st December 1891, pp. 1, 2.

Report on the Health of Tamsui for the two years ended 30th September 1892, pp. 20–24.

Report on the Health of Chinkiang for the year ended 31st March 1892, pp. 10–12.

Report on the Health of Swatow, pp. 13–15;

Report on the Health of Shanghai, pp. 27–31; each of these referring to the year ended 30th September 1892.

Report on the Health of Wenchow, pp. 3, 4;

Report on the Health of Pakhoi, pp. 5–8;

Report on the Health of Ichang, p. 9; each of these referring to the half-year ended 31st March 1892.

Report on the Health of Chefoo, pp. 16, 17;

Report on the Health of Ichang, pp. 18, 19;

Report on the Health of Wenchow, pp. 25, 26; each of these referring to the half-year ended 30th September 1892.

I have the honour to be,

SIR,

Your obedient Servant,

R. ALEX. JAMIESON.

THE INSPECTOR GENERAL OF CUSTOMS,
PEKING.

The Contributors to this Volume are:—

WILLIAM KIRK, M.D., M.CH.	Hoihow (Kiungchow).
J. H. LOWRY, L.R.C.P.Ed., L.R.C.S.Ed.	Wenchow.
A. SHARP DEANE, L.R.C.P.I., L.R.C.S.I.	Pakhoi.
E. A. ALDRIDGE, L.M.&L.R.C.P.I., M.R.C.S.	Ichang.
J. A. LYNCH, M.D., M.CH.	Chinkiang.
HENRY LAYNG, M.R.C.S., L.R.C.P.	Swatow.
E. W. VON TUNZELMANN, M.B., M.R.C.S.	Chefoo.
ALEXANDER RENNIE, M.B., C.M.	Tamsui.
R. ALEX. JAMIESON, M.A., M.D., M.R.C.P.	Shanghai.

DR. WILLIAM KIRK'S REPORT ON THE HEALTH OF HOIHOW (KIUNGCHOW)

For the Fifteen Months ended 31st December 1891.

THE health of this port during the past 15 months has been on the whole very good, partly due, no doubt, to the unusually prolonged winter 1890–91 and the following comparatively cool summer.

Among the European population there was little sickness, and there were no deaths; and among natives there was less sickness than during the previous year. Cases of malarial character were rare, and no case of dysentery came under my observation.

Towards the end of October and beginning of November 1890 the influenza epidemic made itself felt for the second time. Few, if any, of the foreigners escaped; but in no case were the symptoms of any great severity, and all yielded readily to treatment. The disease was also very prevalent among natives.

In August an outbreak of cholera was reported to have taken place in the neighbourhood of Kiungchow—the prefectural city, some 5 miles distant. None of the cases came under my personal observation; but judging from the fact that the disease did not spread, nor manifest itself in the usual way, I am of opinion that it was not true Asiatic cholera, but merely severe diarrhœa, attended with much pain and weakness, and due, probably, to surfeits of unripe fruit and vegetables or to some local defective hygienic condition.

As before remarked, the weather during this period has been particularly favourable to the health of the foreigner. The winter cold lasted well up to the end of March and the summer was much cooler than usual. Tropical thunderstorms were of frequent occurrence throughout the spring and early part of summer, and the accompanying rainfall was at times very heavy. The greatest rainfall in one day (2.20 inches) occurred on the 5th September. From the appended meteorological table it will be noticed that the registered temperature differs little from that of previous years. The highest registered temperature (95°) occurred on the 14th April and 29th May, and the lowest thermometrical reading (52°) was taken on the 12th February.

Several cases of gunshot wound, the result of the riot which took place at this port in October 1890 between the soldiers and civilians, came under treatment. Many persons were shot dead, and about 40 others were more or less severely wounded. In some the injuries were of a character too severe to be hopeful of good results, but of the less severely wounded the majority made wonderful recoveries; in fact, considering the circumstances and surroundings of some of these cases, I must confess I was quite astonished at the rapidity and completeness of the healing process. The guns used were of the old-fashioned muzzle-loading type, and

the bullets being large, round and roughly made, produced large, ragged, irregular-shaped wounds and much destruction of tissue.

After freeing the wounds from as much as possible of the embedded foreign matters, and after a thorough cleansing with perchloride of mercury solution, a dressing of carbolic oil was applied in most cases.

One case was of a character rarely met with in civil practice, and interesting from the fact that the bullet in its course made six distinct apertures, viz., three at points of entrance and three at points of exit. Its course was as follows: entering first the anterior part of outer surface of left thigh, high up, it passed right through the thigh, emerging on inner surface; next it passed through the soft structures at root of penis, making a wound of entrance and a wound of exit; and finally it passed completely through the right thigh, its aperture of exit being almost exactly on a level with the aperture of entrance on outer surface of left thigh. The patient survived his injuries but a very few hours, and judging from his collapsed condition and the hæmorrhage, I concluded that one or both of the femoral arteries had been injured.

The appended abstract is taken from the Custom House meteorological tables.

METEOROLOGICAL TABLE, October 1890 to December 1891.

Month.	Thermometer.		Barometer.		Rainfall.	
	Maximum.	Minimum.	Highest.	Lowest.	Number of Hours.	Quantity.
1890.	° F.	° F.	Inches	Inches		Inches
October	83	69	30.23	29.69	22	2.59
November	78	53	30.28	30.06	32½	1.30
December	84	62	30.32	29.94	10	0.39
1891.						
January	77	62	30.29	30.02	35	2.74
February	84	52	30.88	29.84	137	0.91
March	89	61	30.30	29.80	111	0.59
April	95	61	30.25	29.73	68	5.18
May	95	72	30.12	29.76	20	7.66
June	93	76	29.97	29.68	31	9.03
July	92	76	29.98	29.60	30	5.12
August	90	75	29.97	29.66	50	9.49
September	87	76	30.08	29.59	100	12.51
October	89	76	30.23	29.90	22	4.55
November	84	61	30.35	30.00	37	0.96
December	74	59	30.43	30.10	61	2.22

Dr. J. H. LOWRY'S REPORT ON THE HEALTH OF WENCHOW

For the Half-year ended 31st March 1892.

The health of foreigners resident here has been generally good during the past six months; there have been few cases of sickness attributable to climatic causes. The winter was fairly mild—certainly up to Christmas we had no serious cold weather. During February and March a thin coating of snow was noticed on the hills. The rainfall has not been so great as in the previous six months. Bronchial catarrh has been very prevalent among both foreigners and natives during the past two months, but, so far, no cases of influenza have been observed. There was no serious epidemic among the native community; chicken-pox had its sway for a time, and two foreign children were attacked.

Accidents.

"*Lawn Tennis Leg.*"—An ardent tennis player, while playing a quiet game, received suddenly an accident to the calf of his leg, and exclaimed at once to his opponent, "You struck me." He hopped to a seat and was subsequently taken home in a chair, and I saw him shortly after. There was considerable pain in the middle of the calf, and there was a boggy feeling over the painful part. The sufferer was totally unable to put his foot to the ground. I came to the conclusion that some fibres of a muscle, probably the plantaris, had been ruptured. With rest, bandaging, etc., and the subsequent wearing of an elastic stocking, the patient was able to walk with a stick after three weeks. This case is precisely similar to the one reported by Dr. Powell, of Ottawa, in the *Lancet* of 7th July 1883, and in vol. ii of the *Lancet*, same year, other like cases are reported. In all, the receiver of the injury at once exclaimed, "Someone struck me."

Fracture of Skull.—A Chinese boy, æt. 8 years, fell from the city wall, a distance of 30 feet, and sustained a compound fracture of the right parietal bone about the eminence, besides receiving incised wounds on the right brow and temple. He made a slow but good recovery.

Dislocation of the Wrist.—A Customs coolie, while stepping into a sampan from the jetty, slipped and fell, dislocating his left wrist. I saw him immediately after and reduced the dislocation with ease.

Incised Wounds of Face.—A blind Chinese, æt. 70, while struggling with a thief in the night, fell or was thrown down a narrow stair, receiving severe injuries to the face. There was a large, gaping wound on the chin, and the left half of the upper lip was almost torn off; there were also small incised wounds on the left cheek and brow. By careful suturing, the wounds did well, and very little deformity was left.

Eversion of Finger-nail.—A Chinese actor was bitten on the finger by one of his fellows during a quarrel. A very unhealthy inflammation followed, which necessitated the removal of the nail.

Compound Fracture of the Elbow-joint.—The missionary lady, mentioned in my last Report, who fell from the city wall and received the above injury went up to Shanghai. The surgeons under whose care she was removed a quantity of dead bone. Later—five months after the injury—it was found necessary to amputate the arm at the shoulder-joint, and she subsequently died.

The following medical and surgical cases (foreign and native) have been treated during the period under review :—

Amenorrhœa.
Asthma.
Bronchial catarrh.
Carcinoma of womb.*
Carbuncle.
Chicken-pox.
Congestion of liver.
Congestion of lungs.
Diarrhœa.
Dislocation of wrist-joint.
Dyspepsia.
Eversion of finger-nail.
Fracture of skull.
Gonorrhœa.
Incised wounds of face.
"Lawn tennis leg."
Pharyngitis.
Phthisis.
Remittent fever.

* Case of old standing, which proved fatal in October, after much suffering.

I append an abstract from the Customs meteorological observations taken at Wenchow (latitude, 28° 1′ 30″ N.; longitude, 120° 38′ 28½″ E.).

METEOROLOGICAL TABLE, October 1891 to March 1892.

Month.	Barometer.		Thermometer.		Rainfall.	
	Highest.	Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
1891.	*Inches*	*Inches*	° *F.*	° *F.*		*Inches*
October	30.32	29.80	81	65	18	6.18
November	30.65	29.93	76	47	4	2.21
December	30.57	29.90	67	40	12	2.64
1892.						
January	30.60	29.90	65	38	5	0.42
February	30.50	29.75	63	38	19	5.35
March	30.40	29.75	61	38	22	8.02

DR. A. SHARP DEANE'S REPORT ON THE HEALTH OF PAKHOI

For the Half-year ended 31st March 1892.

IN the Report for the preceding half-year it was stated that the health of this district for the period then under review had attained an average far above that of some years past. I now have to add that that happy state of affairs continued until the 12th February, when a universal epidemic manifested itself alike among foreigners and natives. Cattle also were said to be affected at the same time, and apparently in the same way, as human beings, but not to the same extent, as it was in some villages only that the disease appeared among them.

Among the foreign residents, one female infant was born on the 19th October, being the second female out of a total of seven children born since the opening of this port.

One death, resulting from chronic disease of the kidneys—complicated by the formation of a vesico-intestinal fistula about 18 months prior to death,—occurred on the 8th February.

Influenza, from which eight of our small community suffered, was prevalent during February. Case C., however, is the only one calling for comment; the others being of a mild variety, convalescence was established in 10 or 12 days.

The general symptoms of this epidemic were: headache, variously situated, but principally bilateral-parieto-frontal; vertigo; harsh cough, with little or no expectoration; catching pain across the front lower half of the thorax; aching pain across the back, just above the sacrum, and general muscular pain; anorexia; urine high-coloured or unduly loaded with phosphates; sleeplessness, and sometimes delirium. Temperature varied from 97° to 104°, but averaged 102°.5 for the first three days of the attack, there being little difference between the morning and evening. A great sense of exhaustion was complained of in some cases.

If bronchitis did not supervene the patients made a quick recovery. This complication occurred in three of the cases—one in particular under Dr. HORDER'S care, in which there was considerable dyspnœa, the lungs being blocked up with tenacious mucus.

The constant symptoms—though varying in severity, but common to all—were pain in the head, vertigo, pain above the sacrum, griping pain across the thorax, and anorexia.

CASE C.—On the evening of the 23rd February a Tidewaiter, whom in December 1890 I examined and passed in sound health for the Customs service, reported sick, stating that he had just been relieved from duty on board a steamer where he had fainted; that he had suffered from headache and a harsh dry cough for three days, but thought nothing of them; that his appetite had been failing, and that the only food he had taken on this day was a cup of chocolate in the forenoon and a few glasses of plain filtered water during the day.

When the patient reported to me his symptoms were:—Intense diffuse throbbing headache; he could not localise the pain, but said he felt as if his head would burst. Dull grinding pain across the back, just above the sacrum. Catching pain on inspiration felt in the sides and across the chest in front,

following the course of the fifth and sixth ribs. Respirations 35 per minute, laboured. Frequent harsh cough. Dizziness and unsteadiness of gait. The pupils were dilated and responded sluggishly and partially to light. The surface of the body was cold and bathed in perspiration. The pulse was barely perceptible, and there were apparently long intermissions between the pulsations. The first and second sounds of the heart had given way to what I can only describe as a succession of short, faint, puffing sounds, of equal rhythm and intensity, numbering 190 or 200 per minute. The lungs were healthy, air entering them freely; no râles could be detected and, with the exception of prolonged expiration and laboured breathing, nothing abnormal could be found. The liver and other organs were normal. The tongue was clean. The temperature taken in both axillæ registered 97°. There was no rigor at any time. The bowels had acted normally in the morning; urine was passed three times during the day; and there had been no vomiting. His use of tobacco was moderate, as was also his consumption of stimulants.

24th February, 8 A.M.—Patient spent a very restless night, but was not delirious. He rose some time about 2 A.M. to urinate, and staggered about the room as if he were drunk, having to hold on to chairs, etc., to keep himself from falling. Headache much less; pain situated in the occiput, with a tendency to be felt in the neck. Still severe griping pain across the chest felt on inspiration. Pain in the back unaltered. Urine abundant, depositing about one half its bulk of phosphates; acid in reaction, specific gravity 1,035, containing neither albumen nor sugar. Tongue clean. Has a most intense loathing for food of any kind. Pupils normal. Cough troublesome, without expectoration. The heart sounds still retain the same character, but are stronger and more distinct. Temperature 103°; skin dry.

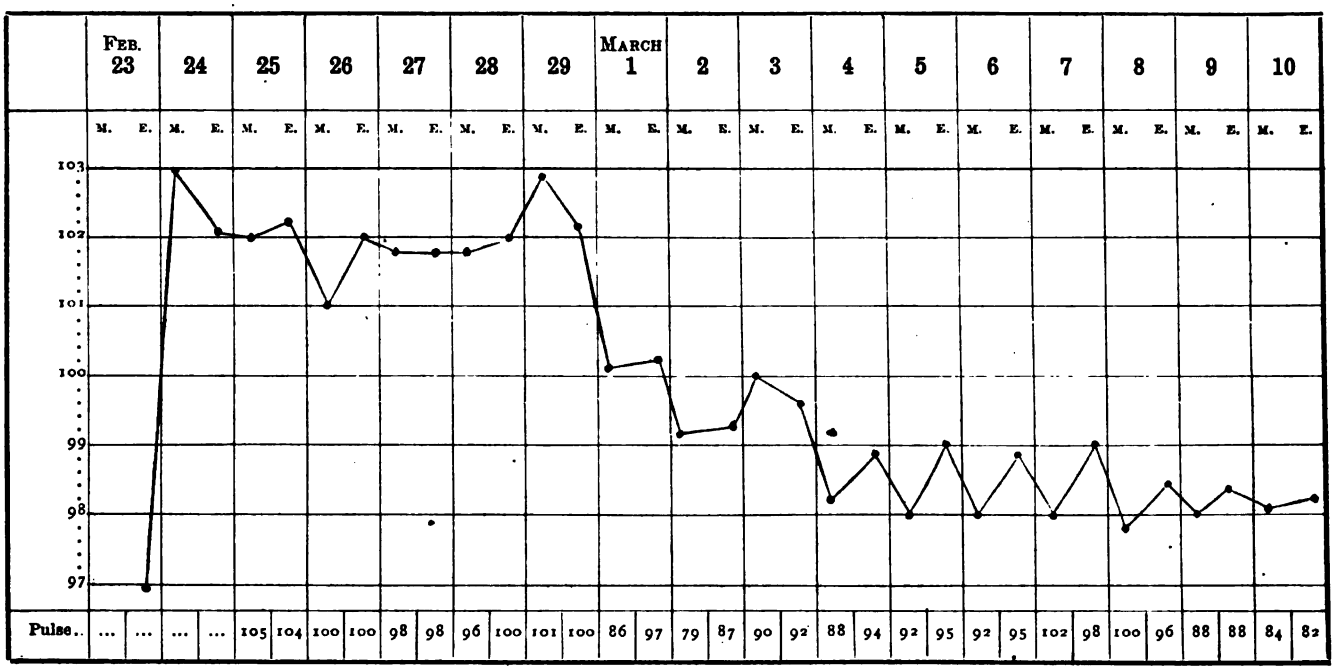
7 P.M.—Temperature 102°.1. Saline aperient given in the forenoon acted, bringing away a small normal motion. Heart sounds distinctly improving; one of the "puffing" sounds is stronger and of longer duration than the other, but still does not resemble the second sound of the heart. Headache not felt, except when the head is suddenly moved. Pain across the chest and over the sacrum still continue. Feels very light-headed if he only sits up in bed.

25th February, 9 A.M.—Had a fairly good night; slept for six hours; perspired profusely. Cough less troublesome. Took half a glass of milk during the night, which he vomited at once. Pain across sacrum and chest continues unaltered. Headache has left the occiput and is now situated behind the eyes and in the temples. Urine still very heavily loaded. Temperature 102°; pulse 105. The first and second sounds of the heart, though weak, could be heard distinctly, unaccompanied by bruit of any kind.

Nothing further of interest is to be obtained from the notes of this remarkable case, which at first looked very much like one of poisoning by some cardiac depressant drug. From the 25th February the patient made a slow but uninterrupted recovery, all the symptoms, with the exception of anorexia, gradually subsiding, appetite being last regained. On the 1st March he considered himself well, but, having regard to the temperature and pulse, convalescence was not pronounced until about the 10th March, and not until nine days later did he return to duty.

In what has gone before it will be noticed that in this case there was a distinct premonitory stage of three days' duration, during which time the only symptoms were headache, cough and failing appetite. On the fourth day the climax was reached, with sudden symptoms of collapse as indicated by failure of the heart's action and subnormal temperature of the body; and on the sixth day profuse diaphoresis ushered in the crisis, with immediate restoration of the normal action of the heart. Then the headache was peculiar in that it was at first diffuse; on the next day it was located in the occiput and upper cervical region; and on the day following it was frontal, from which situation it gradually disappeared. Anorexia, without further evidence of gastric disturbance, was also a marked symptom; and the amount of deposit in the urine is another point worthy of mention, as it would look as if the kidneys were the principal medium through which the poison in this disease is eliminated. I have never seen urine throw down such a copious and dense precipitate as in this case.

The subjoined chart indicates the course of the temperature and rate of the pulse in Case C., from which it will be seen that the pulse was very irregular and bore no relation to the temperature.



Among the native population it was reported that more than 30 deaths occurred in Pakhoi during February and the beginning of March due to lung complications in the course of influenza; and numerous deaths from the same cause were said to have occurred.

Simultaneously with the appearance of influenza among foreigners, it was reported to be affecting the inhabitants of every town and village in the surrounding country. Five out of eight of our in-door staff suffered from it. The out-door staff, however, did not suffer in the same ratio, nine only out of 32 contracting the disease. Only two of these cases were severely affected; but such cases must not be taken as representing the general type of the disease as it occurred among the mass of the population, as in many instances it proved fatal.

During the spring of each year the Chinese usually experience an epidemic catarrh affecting the mucous membrane of the nose, throat and perhaps that of the bronchi, which as a rule passes off in a few days, leaving the patient without any after effects. In the present epidemic they recognise three symptoms which do not occur during the course of the ordinary spring epidemic, namely, vertigo, which they consider a very grave symptom; next, complete loss of appetite; and lastly, the debilitated state of the patient after the disease has run its course.

The symptoms of influenza among natives were precisely similar to those which prevailed among foreigners. Bronchitis was of very common occurrence either during or after the disease. In one case I noticed a rash similar to that of scarlet fever on the patient's face, body and limbs. It lasted only 30 hours and then disappeared without desquamation. This rash did not appear to affect the patient's condition; his attack of influenza had been slight, and I do not think it was due to measles, or to his having eaten poisonous fish or any other food likely to cause it.

Foreigners and natives suffering from influenza were treated alike; but in a disease with so many, and in some cases varied, symptoms no special line of treatment can be carried out—symptoms have to be contended with as they arise.

Of the medicines prescribed, antipyrin, where it could be borne, was found very useful, in most cases, for promptly relieving the headache and for temporarily reducing the temperature. Salicylate of soda also acted well in removing the pain in the back and general muscular pain. A native over 60 years of age with bronchitis and intense dyspnœa, of whose recovery I had little hope, and who was taking an alkaline cough mixture with little or no benefit, on being given 10 grains of salicylate of soda every hour, after six doses began to expectorate freely, the dyspnœa subsiding very shortly after.

Case C. was treated at first by the administration of ammonia and ether, with small doses of tincture of digitalis frequently repeated; subsequently acid tonics, quinine and stimulants were ordered.

Early in October the thermometer began to fall, and from that time until February we experienced cool weather. December was not as fine and bright as usual. Throughout February the temperature was very changeable, the thermometer rising and falling as much as 25° in 12 hours.

Fogs occurred frequently during February and March. They gave to the air the appearance of being charged with fine dust instead of vapour. Curiously enough, with the setting in of the fogs came also influenza, and with the change to clear weather the epidemic subsided.

Rain fell to the extent of 15.67 inches from October to March, which, when compared with the fall for the same periods in the two previous years, shows an excess of 4.29 inches over 1890, and 4.82 inches more than in 1891.

METEOROLOGICAL TABLE, October 1891 to March 1892. (Latitude, 21° 29′ N.; longitude, 109° 6′ E.)

Month.	Thermometer.			Rainfall.	Month.	Thermometer.			Rainfall.
	Highest.	Lowest.	Mean.			Highest.	Lowest.	Mean.	
1891.	° F.	° F.	° F.	Inches	1892.	° F.	° F.	° F.	Inches
October	91	65	83.5	2.83	January	78	45	59.0	0.43
November	88	54	70.0	1.09	February	80	45	59.0	1.60
December	76	47	63.0	4.55	March	82	44	62.0	5.17

Dr. E. A. ALDRIDGE'S REPORT ON THE HEALTH OF ICHANG

For the Half-year ended 31st March 1892.

The following abstract is from the meteorological observations taken at the Custom House:—

Meteorological Table, October 1891 to March 1892.

Month.	Thermometer.				Barometer.		Rainfall.	
	Highest.	Lowest.	Average Highest.	Average Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
1891.	° F.	° F.	° F.	° F.	Inches	Inches		Inches
October	89.0	48.5	75.3	61.8	30.260	29.750	17	5.29
November	86.0	34.0	65.9	50.1	30.586	29.854	3	3.04
December	74.0	32.0	57.9	38.5	30.678	29.932	2	0.34
1892.								
January	68.5	28.5	53.3	35.2	30.630	29.880	5	0.54
February	65.0	30.5	51.0	36.0	30.562	29.500	9	1.30
March	73.0	28.5	58.0	40.0	30.404	29.520	5	1.58

As is usually the case at Ichang, the winter has been pleasant, the average temperature for the six months being but a little over 50° F., and the rainfall only 12.09 inches, falling in 233 hours, nearly half of which was in October. Snow fell during three days in February—about ¾ inch on the 5th, and about 1 inch on the 17th.

The British blue-jackets on board the s.s. *Ella*, sent here for the protection of the foreign community after the riot in September, had lately served on the west coast of Africa, and among them some cases of dysentery and malarial fever were attended. The *Ella* was relieved by H.B.M.S. *Esk* on the 9th November, the crew on board of which have enjoyed good health during the winter, as have also the other foreigners living on shore (9 in all), on junks—for want of better habitations—and on the revenue steamer *Lingféng*.

It is said that there has been unusually little sickness in the city. Owing to the unsettled state of affairs, the missionary hospital was closed and very little medical work was done among the native population.

DR. J. A. LYNCH'S REPORT ON THE HEALTH OF CHINKIANG

For the Year ended 31st March 1892.

METEOROLOGICAL TABLE, April 1891 to March 1892.

MONTH.	THERMOMETER.				BAROMETER.		RAINFALL.	
	Highest.	Lowest.	Average Highest.	Average Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
1891.	° F.	° F.	° F.	° F.	Inches	Inches		Inches
April	82	43	70.10	51.70	30.38	29.68	9	2.43
May	96	51	77.70	65.10	30.18	29.52	6	0.54
June	99	62	89.20	72.10	29.84	29.48	5	1.88
July	100	69	90.01	76.50	29.75	29.45	9	12.37
August	99	69	92.01	77.07	29.94	29.58	8	2.53
September	92	57	84.30	70.10	30.10	29.56	10	3.34
October	84	51	72.08	63.00	30.29	29.81	13	2.89
November	77	28	60.10	46.80	30.71	29.88	3	0.48
December	67	20	50.06	35.07	30.63	29.85	4	0.96
1892.								
January	63	21	43.07	32.02	30.66	29.90	4	0.56
February	60	20	44.00	32.00	30.57	29.78	9	3.10
March	63	25	47.30	36.50	30.47	29.67	7	2.14

For the above table I am indebted to Mr. J. H. J. SUSEMIHL, Acting Tidesurveyor.

The summer of 1891 was one of the longest and most trying ever felt in Chinkiang. Two cases of sunstroke occurred in August, one being fatal.

X., 47, an old alcoholic soaker and the subject of advanced cirrhosis of the liver; had been in feeble health for more than a month; had not been out of the house for several days. At 1 o'clock in the afternoon of the 10th August, while writing a letter, he fell from his chair. Half an hour later I was summoned, and found him profoundly insensible, livid and stertorous, with a temperature of 106°. He was stripped and rubbed with ice. The pyrexia abated, consciousness returned; and at half-past 4 he was sitting up in bed, talking rationally and sipping a cup of coffee. An ice-bag was fixed on his head and an

antipyrin mixture ordered. He was seen at frequent intervals during this night and the following day. The temperature wavered between normal and 101°.5. At 4 o'clock on the 11th August I found him again comatose. The thermometer in the axilla stood at 106°.5. He had a few epileptoid convulsions. Treatment was unavailing, and death took place a little before 7 P.M.

The other case illustrates a variety of sunstroke which seems to be far from rare, but which is not, to my knowledge, described or alluded to in text-books.

Z., 34, sanguine, robust, of very temperate habits; felt giddy and queer after a cricket match on the 1st August. On the 12th he walked home to tiffin, protected by a sun-hat, dark spectacles and an umbrella. On entering his house he felt giddy. I saw him at 2 o'clock, when he was suffering from intense vertigo, some confusion of ideas and great restlessness, with a feeling of "going mad." These sensations came on paroxysmally, at intervals of 10 or 20 minutes, when he would rise and pace round the room, stamping and gesticulating violently, with a bewildered and anxious look. Pulse full and slow, and again hard and tense, by turns; pupils dilated; temperature normal; face flushed; temples throbbing. Ice was applied to the head, 6 grains of calomel laid on his tongue, and bromide of potash in 20-grain doses administered every three hours. These measures gave great relief. For the next three weeks he was kept perfectly quiet in a darkened room, with ice to his head, and had small doses of bromide. Improvement was slow, with occasional return of the first symptoms in a minor degree. On the 27th and 28th August he had a very severe relapse; signs of emotional weakness made their appearance for the first time. On the 2nd September Dr. REID, of Shanghai, saw him with me. He had then considerably recovered, and it was agreed to remove him to the Shanghai Hospital, where he passed under the care of Drs. JAMIESON and REID. The further history of the case belongs to Shanghai; but I may mention that his recovery was gradual and steady. He was able to leave the hospital after a month's stay; took a trip to Corea; and since then has been as well as ever.

Of typhoid fever there were three cases; one, seen in July, proved fatal:—

C., 24 (?), missionary lady; came here on 14th July from Yang-chou. She was said to be suffering from dysentery, which had commenced a week or 10 days before. Later on I met Dr. HOWARD TAYLOR, who had attended her in Yang-chou, and who informed me that the symptoms were unmistakeable; she had 10 to 20 small muco-sanguinolent dejections a day. Under my charge she had four or five stools a day, copious, yellow and offensive, without a trace of blood or mucus. There were a few rose-spots on the epigastrium; the abdomen was slightly swollen; and there were distinct tenderness and gurgling on pressure in the right iliac fossa. The temperature, ranging from 101° to 104°, presented the characteristic curve of typhoid. The pulse, extremely rapid and feeble, grew every day more thready. She died on the 17th, of cardiac failure.

The other two cases, occurring in September 1891 and March 1892 (the latter also in a missionary lady from up country), ran a favourable course, presenting no special features.

One other death took place in 1891:—

S., 43, an emaciated, feeble and breathless man, suffering from an aneurism of the thoracic aorta of three years' standing, came to the port in the last days of November. On the 8th December he went off duty with symptoms of bronchial catarrh. On the 13th he had some fever and rusty sputa. On the 16th there was dulness over the base of the right lung. The sufferings of the patient from incessant cough, dyspnœa, sleeplessness and exhaustion increased every day up to his death, which occurred on the morning of the 20th from respiratory failure.

At the autopsy the central portion of the chest-cavity was found occupied by an enormous aneurismal dilatation of the ascending and transverse aorta, pressing upon the heart, bronchi and great

vessels, and adherent to the chest-wall in front, over a space of about 1 inch square, at the junction of the sternum and second rib, both of these bones being deeply eroded. At this spot there was no deposit of fibrin in the interior, but all the remainder of the cavity of the aneurism was lined with friable fibrinous laminæ, over an inch thick in parts. The middle and lower lobes of the right lung were hepatised.

A case of perityphlitis (ending in resolution), a few mild cases of influenza and of malarial remittent, one of intermittent, one of chronic diarrhœa, and an outbreak of measles in a family of four children complete the record of the year's sickness.

Two children were born in the first quarter of 1892.

DR. HENRY LAYNG'S REPORT ON THE HEALTH OF SWATOW

For the Year ended 30th September 1892.

THE general health of the foreign and Chinese population has been highly satisfactory. Excepting a short and mild epidemic of "influenza" in the early spring, and one of tropical measles localised among the foreign children on Double Island, no disease has assumed an epidemic nature. No case of cholera has been seen. In the autumn of 1891 malarial fever of an intermittent type was more prevalent than usual among foreigners and Chinese; this was due, in all probability, to the excessive rainfall that accompanied the typhoon of September 1891 and to the denudation of the surface soil of the hills, together with the uprooting of many hundreds of trees. A well-recognised point here in reference to the prevalence of malarial fever is that it is far less extensive on the swamp of Swatow than it is on the south side of the river, where numerous villages are situated at the base of the hills. In describing Swatow as a swamp, it must be remembered that its extensive mud foreshores are daily washed twice by the tide and that its creeks and inlets are likewise well flushed. The summer heat was less severe and less prolonged than usual. During the hot months a considerable portion of the foreign community resided on Double Island.

In summer a frequent cause of trouble to many foreigners is a condition of malaise and despondency due to slight but persistent elevation of the bodily temperature, which, though rarely rising above 99°.5, is accompanied by muscular pains, nausea, headache and a feeling of lassitude. I have repeatedly noticed that if on a hot day the temperature of the body be only ever so slightly raised, the individual, on being questioned, will state that he does not feel quite well, or that the heat is too much for him. This I note, as one frequently hears it said that a temperature of 98°.8 or 99° on a hot summer's day is immaterial. My own idea is that it is of much importance: experience has taught me that such persons do not stand the debilitating influences of tropical summers as well as others.

Frequently I am consulted by patients saying that for some time they have not felt themselves, that they are not ill, have no fever, but that everything is a bother to them, they cannot work as they ought to, etc.; in fact, the history given is much the same as that so often heard when one is first consulted in a case of typhoid fever, only that the period of malaise is more extended and in most cases less severe. With such a history from a patient I expect to find, and usually do find, some slight elevation of temperature some time during the 24 hours. In many of these cases the rise of temperature will only continue for a few hours; but in others the morning register may be 98°.8 or 99°, and the afternoon and evening 99°.4 or 99°.6—only rarely is 100° reached. When the morning temperature is not above normal, I have often found it many points below. The same condition follows slight ailments in children and continues long after convalescence has been well established; I have also noted it in women after childbirth.

As to treatment, many cases recover quickly under arsenic and quinine, or arsenic and iron; but frequently the condition continues for weeks. Change of climate for a short time is very effectual, but often impossible. Cases of this kind have been noticed in persons living on

the top of the hills and in those resident on Double Island. People leading a sedentary life are most subject to it, but no classes are exempt.

Nine cases of tropical measles were treated on Double Island during the summer months, the first occurring on 2nd July and the last at the end of September. The nature and spread of this small epidemic were peculiar: no case was seen in Swatow and no case was heard of among the Chinese children on the island. At the time there were about 40 foreign children on the island, and as they met every afternoon on the small beach, one expected a quick spread of the disease; but not so. The nine cases extended over nearly three months.

The first case was that of a visitor from Hongkong, but as the child had been residing on the island for some weeks before the onset of the attack, there is no reason for supposing that the infection was brought from Hongkong.

The nature of the attacks was most varied; some were so slight that the children were convalescent in a few days, others, again, were severe.

Coryza, suffused eyes, bronchial catarrh and a febrile condition were present in all cases. The typical rash of true measles was only present in one. In all except the very mildest there was an abundant papular eruption, which appeared first on the face, chest and arms, and after an interval of some days on the legs, and lasted three or four days.

In two cases urticaria appeared after apparent convalescence had been established—in one as late as the 12th day.

Ear-ache was present in two cases, diarrhœa in two and constipation in some.

No albumen in the urine.

In families where the strictest isolation was carried out no second case occurred, but where this was omitted, other children suffered.

Temperature chart No. 1 is that of a severe case, which might be considered a typical case of true measles. The child was delirious for the first five days and had congestion of one lung.

CHART No. 1.

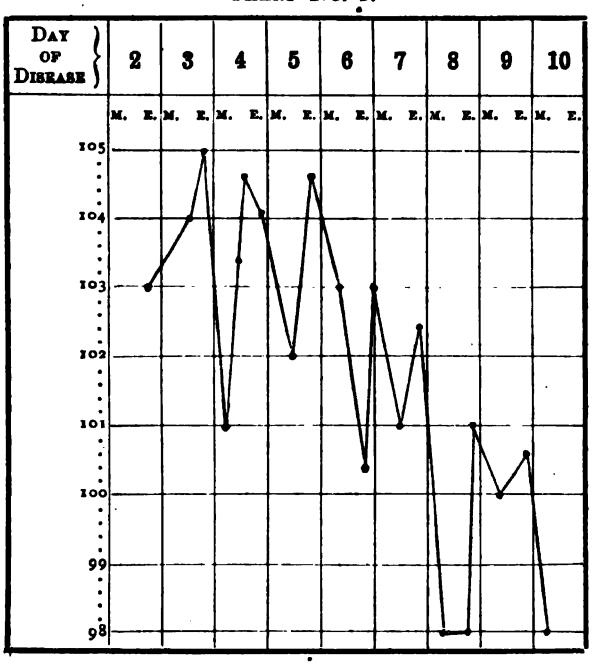
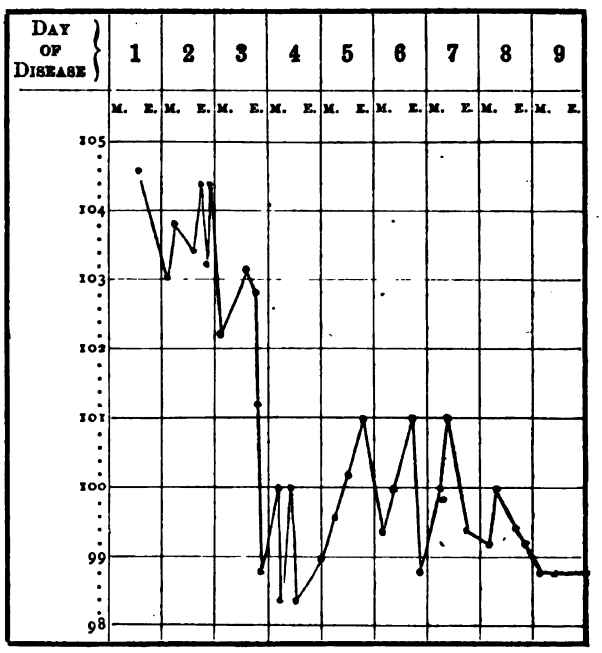


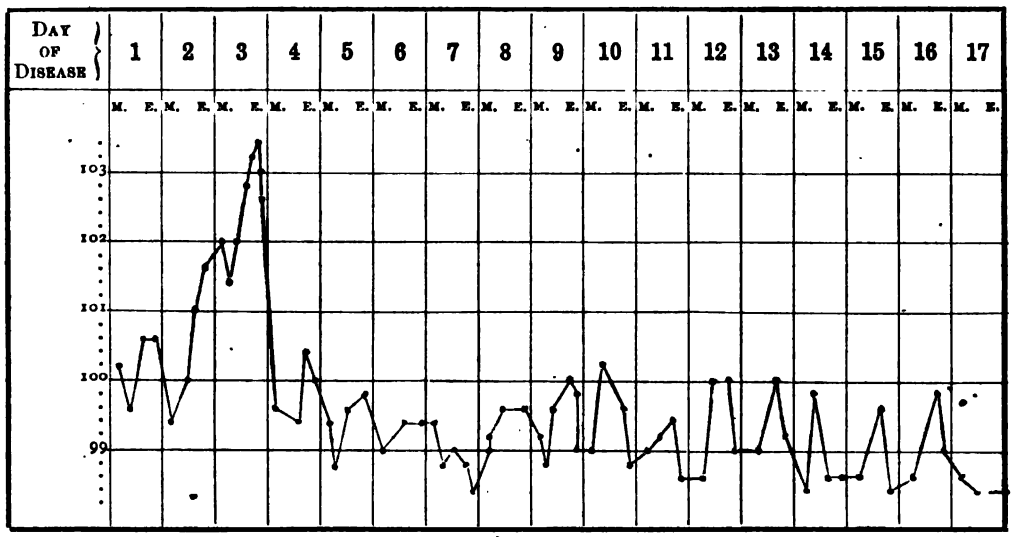
CHART No. 2.



No. 2. Delirium with high fever for 48 hours, with sudden fall of temperature on the appearance of the rash. The onset of the attack in this case was very severe and sudden. There being a clear history of exposure to a fierce sun, it was not at first considered as measles.

No. 3. This was a very prolonged attack. All the symptoms were slight. The first rash appeared on the fourth day, but did not show itself on the legs until the eighth day, and after fading away reappeared.

CHART No. 3.



Three cases of typhoid have been under treatment.

There have been nine births.

There were two deaths—one an infant, from acute hydrocephalus, and one a child aged 9 years, from exhaustion in an attack of gastritis with dilatation of the stomach.

Dr. E. W. VON TUNZELMANN'S REPORT ON THE HEALTH OF CHEFOO

For the Half-year ended 30th September 1892.

During the half-year ended 30th September 1892 the health of the Imperial Maritime Customs staff, as of the foreign residents generally, was good. The subjoined table shows the amount and nature of sickness among the out-door staff; among the in-door staff there were nothing but trivial ailments.

Case.	Nature of Illness.	No. of Days off Duty.	Case.	Nature of Illness.	No. of Days off Duty.
1	Intermittent fever	6	5	Diarrhœa	2
2	Diarrhœa	2	6	Chronic rheumatism	4
3	Subacute rheumatism	4	7	Dental abscess	3
4	Diarrhœa	4	8	Diarrhœa	6

Among the other residents there were five cases of acute illness, viz.:—

Pneumonia	1	Acute dysentery	1
Rheumatic fever	1	Choleraic diarrhœa	1
Acute gastro-enteritis	1		

All did well.

Four children were born during this period, two of each sex—three to residents in the port, one aboard a merchant barque.

A considerable number of visitors spent a portion of the summer here, enjoying for the most part good health. One was found soon after arrival to be affected with tubercular phthisis, which progressed rapidly at first, then became chronic, with improved general health. There were several cases of dysenteric diarrhœa, mostly in children, and two of infantile cholera. Nearly all were clearly due to dietetic errors, to injudicious exposure to causes of chill or to insolation.

In the General Hospital 11 cases have been treated, as shown in the appended table. The one fatal case was an elderly seaman who was admitted suffering from subacute bronchitis, alcoholic dyspepsia and aortic regurgitation. After 10 days, feeling much better, he discharged

himself, against advice. He returned next day with symptoms of a gross cerebral vascular lesion, probably thrombosis. He died three days later.

Case.	Sex.	Nature of Illness.	No. of Days in Hospital.	Result.
1	Male	Bronchitis, cardiac disease, etc.; cerebral thrombosis...	13	Death.
2	"	Acute dysentery	13	Discharged well.
3	"	Cystitis	29	" "
4	"	Contusion of hip	25	" "
5	"	Paraphimosis	3	" "
6	"	Typhoid fever	73	" "
7	"	Septicæmia	15	" "
8	Female	Pleurisy	18	" "
9	Male	Rötheln	2	" "
10	Male child	Rötheln; tonsillitis	9	Discharged improving.
11	Female	Febricula	9	Discharged well.

The first case of rötheln (No. 9) was isolated in the hospital until the rash, which had appeared on the day of arrival in Chefoo, had entirely disappeared; the usual precautions, carbolic bath, etc., were taken before discharge, to minimise the risk of infection. In spite of these precautions, a subsequent case occurred after the usual period of incubation (14 days) and another a week later, both children. Both were promptly isolated—one in Dr. Douthwaite's fever hospital, one in the General Hospital,—and no further cases occurred.

The meteorological table requires little comment. The daily variations in temperature and humidity during the three summer months are extremely wide, and seem to afford an adequate explanation of the undoubted fact that visitors, especially those from the South, many of whose malaria-damaged spleens are unable to fulfil their duty of protecting the intestines from sudden vascular engorgement, are very much more liable to bowel complaints than the residents are—a fact usually, though erroneously, attributed by the public to the hard Chefoo water, which, if adequate precautions be taken, is innocuous as a rule, though often nauseous.

Meteorological Table, May to September 1892. (Observations taken at 9 A.M.)

Month.	Thermometer.				Relative Humidity.	
	Dry Bulb.		Wet Bulb.			
	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.
	° F.	° F.	° F.	° F.		
May	72.0	59.0	64.5	54.0	79.5	55.5
June	86.0	62.5	75.0	58.5	88.0	46.0
July	84.0	75.0	80.0	67.0	90.0	59.0
August	85.0	72.0	81.5	68.5	100.0	50.0
September	78.0	63.0	77.5	56.0	97.0	60.0

DR. E. A. ALDRIDGE'S REPORT ON THE HEALTH OF ICHANG

For the Half-year ended 30th September 1892.

THE following abstract is from the meteorological observations taken at the Custom House:—

METEOROLOGICAL TABLE, April to September 1892.

MONTH.	THERMOMETER.				BAROMETER.		RAINFALL.	
	Highest.	Lowest.	Average Highest.	Average Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
	° F.	° F.	° F.	° F.	Inches	Inches		Inches
April	91.0	42.0	73.7	55.5	30.17	29.45	12	9.42
May	99.0	49.0	84.7	63.0	30.30	29.56	11	4.51
June	100.0	67.0	93.5	71.6	29.83	29.51	6	2.54
July	110.5	71.0	98.9	77.3	29.78	29.50	12	4.35
August	110.5	71.0	98.4	76.6	29.83	29.51	16	8.49
September	100.0	58.0	86.5	67.7	30.29	29.58	7	1.54

The most noticeable feature presented in the above is the extraordinarily high temperature recorded. Never has such heat been known at Ichang, nor has the summer ever been of such long duration. The very extreme heat may be said to have begun on the 19th July and not to have ended before the 21st August; the average maximum temperature between those dates reached 102°.7, while both before and afterwards the thermometer occasionally registered 100°. The rainfall was 30.85 inches, making 42.94 inches for the last 12 months, falling on 105 days, during 537 hours. The river in July rose 20 feet 4 inches in three days, and covered the Bund opposite the Custom House to the depth of 3 feet. Not since the opening of the port has there been such a flood, and many huts and houses along the river bank were either washed away or were under water for some days.

The health of Europeans generally was not good; there were several cases of dysentery, remittent fever and other fevers of malarial origin, but no deaths. The great heat experienced for so long a period was most trying, and in the case of anyone taken ill, greatly delayed convalescence.

The Chinese population suffered from a severe epidemic of cholera, from which, fortunately, all Europeans escaped. Here as in other Chinese cities, cholera every summer causes

many deaths, but not since 1883 was there any such outbreak as that which occurred this year. About 700 persons are reported to have died during the latter part of May, June and the first few days of July. The years 1850, 1864, 1883 and now 1892 are memorable in the annals of Ichang for cholera epidemics. Cholera has been present this summer all along the Upper Yangtze valley. At Shashih, 80 miles down river from Ichang, it caused about 1,000 deaths between July and the end of September. At almost the same time over 2,000 persons died, it is said, in the Chinese and Manchu cities of Ching-chou, while reports reached us of a still more heavy mortality from cholera up river at K'uei-chou-fu, Chungking and Ch'êng-tu, in the province of Szechwan. The natives here have two names for cholera, *wu-sha-chêng* (烏痧症) and *huo-luan-chêng* (霍亂症), the former including cases in which the patient is struck down and usually succumbs to the poison after very little or no purging and vomiting, while the latter term is given to a much less fatal class of cases in which all the general symptoms of the disease are observed.

In April there were some cases of small-pox both within and outside the native city.

On the night of the 4th September a fire broke out on the island of Hsi-pa, and after destroying many houses and mat huts, spread to the junks that crowded the creek separating the island from the city, and finally burnt down some property on the mainland. It is estimated that 100 persons were either drowned in the attempt to escape from the blazing junks or burnt to death.

Life at Ichang during the summer six months has not been enviable, for unprecedented heat, a cholera epidemic, a serious fire and the highest recorded rise in the river were comprised in its incidents.

DR. ALEXANDER RENNIE'S REPORT ON THE HEALTH OF TAMSUI

For the Two Years ended 30th September 1892.

DURING the period under review the health of the community with regard to diseases of climatic origin was rather less satisfactory than usual.

The summer of 1891 was cool and fairly healthy, but on a recurrence of hot weather in October cases of fever became frequent both among foreigners and natives. Among the former the cases were of a mild intermittent type, while remittent and continued forms proved most fatal among the latter.

At this period two foreigners incurred severe attacks of dysentery, with a fatal result in one case.

In December diphtheria was prevalent among the natives at the port; about 20 deaths occurred from this cause, chiefly among children. The disease presented the typical symptoms. It is exceedingly rare in the island, as during a period of six years these are the only cases I have observed. Seeing that the town did not appear to be in a more insanitary condition than usual, the occurrence of the disease is difficult to account for.

The summer of 1892 was fairly hot, but dry, and foreigners enjoyed comparatively good health.

In the Customs quarters, the building of raised bedrooms, although a less satisfactory arrangement than proper upper-storied houses, is nevertheless a step in the right direction. The period that has elapsed since their erection is as yet too brief to enable us to institute any comparison from a sanitary point of view with the ground-floor apartments formerly occupied as bedrooms, which in a climate with such a heavy rainfall as this are apt to be exceedingly damp. In summer, when a good elevation is a desideratum, the new raised bedrooms ought to prove a decided benefit.

Taking a retrospective view of the health of the port, I am inclined to believe that so far as the prevalence of diseases of malarial origin is concerned, a gradual improvement has taken place. To this conclusion I am led by comparing my own observations, extending over six years, with those of my predecessors. Although cases of intermittent fever are very frequent among foreigners, the severe remittent types are now seldom met with.

Three deaths and two births have to be recorded.

1. *Phthisis.*—A. B., aged 36, male; had been a resident of the port since 1884. The commencement of his illness dated from July 1888, when deposit was noted in the apex of the left lung. The disease extended more or less continuously until the beginning of 1891, when several cavities had

formed in the left lung along with consolidation of the apex of the right. Towards the end of March certain symptoms pointed to invasion of the cerebral meninges by the tubercular process, viz., increased temperature, severe headache, ptosis of the right eyelid, dilatation of the left pupil, partial paralysis of the left side, and unconsciousness which gradually deepened until death occurred on 19th April.

2. *Dysentery.*—C. D., 18 months resident, was on 25th September 1891 seized with severe abdominal pain, vomiting, dysuria, straining and tenesmus, accompanied by characteristic stools. Patient was at once confined to bed, and under suitable diet and treatment by quinine and ipecacuanha the more distressing symptoms almost disappeared, but the stools, although improved in character, were still frequent, and temperature remained high.

3rd October.—Motions improved as to frequency and character. General condition somewhat improved; temperature 102°.8, but towards midnight temperature became high and the patient delirious.

4th October, 2.15 A.M.—Temperature 104°; pulse 122.

11.30 A.M.—Temperature 105°.5; pulse 136. Cyanosed; unconscious.

3 P.M.—Temperature 105°.8. Died at 4 P.M.

The attack was evidently of malarial origin, and characterised from the outset by the obstinate nature of the fever as compared with the abatement of the other symptoms.

3. *Cirrhosis of the Liver; Low Fever; Syncope.*—E. F., male, aged 38; four years resident in the island. With the exception of a severe attack of fever in July 1889, had enjoyed good health. Towards the end of June 1892 felt tired and out of sorts. Temperature ranged from 99° to 100°. Liver slightly enlarged; spleen much enlarged, but may have been so previously, as the patient stated that when a youth he had suffered much from anæmia consequent on malarial attacks.

17th July.—Patient took a short trip to the mainland, returning on the 23rd. Condition unchanged. Has been taking Warburg's tincture and a mixture containing diluted nitro-hydrochloric acid and Fowler's solution.

In the beginning of August went to Kelung.

10th August.—Temperature 100° to 102°. Conjunctivæ yellow. Liver smaller; no tenderness; no ascites. Urine high coloured; no albumen. Takes an occasional dose of calomel.

17th August.—Patient somewhat weaker. Suffers much inconvenience from two external hæmorrhoids, one of which is ulcerated. Under cocaine snipped them off; much relieved.

19th August.—When visited at 10 P.M. patient was rather despondent. Temperature 103°; pulse 82. He retired to rest, but having about 11.15 got out of bed, fell on the floor. On the arrival of medical assistance shortly afterwards life was found to be extinct.

Postmortem examination revealed an enlarged and congested spleen and a cirrhotic condition of the liver—no other pathological change.

The following cases are worthy of record:—

A. B., aged 26, male. Had enjoyed good health during his stay in the island, except for an occasional attack of intermittent fever in the autumn of 1890.

15th November 1891.—Complained of acute pain in the stomach after food and of a tendency to vomit. He attributed the onset to drinking some cold claret while feeling feverish on the preceding day. Considerable relief was experienced from a liquid diet and the administration of bismuth; but the temperature remained slightly elevated, accompanied by spasm of the abdominal muscles and epigastric tenderness so acute as to render minute examination impossible.

In the beginning of December the formation of an abscess was suspected, but whether hepatic or not could not be diagnosed. Subsequently a small swelling became noticeable over the pit of the stomach, continuous upwards with the left lobe of the liver. No fluctuation could be detected.

20th December.—Patient put under chloroform. On inserting exploring trocar, pus was found at a depth of 2 inches, after which an opening was made sufficiently large to admit a large-sized drainage-tube. Pus, at first sanguineous, afterwards thick and tenacious, flowed to the extent of 9 ounces. Cavity irrigated twice daily with a warm solution of boracic acid. Temperature reached normal six days after operation.

By the middle of January 1892 patient was able to resume his occupation and felt strong.

3rd April.—Temperature 104°.4. Patient states that on the previous day, after exposure to wet, he had a shivering fit followed by fever. Painful cough, attended by the free expectoration of blood and mucus. Well-marked dulness with moist râles over the base of right lung. Microscopic examination of the sputum revealed nothing. Liver dulness in front normal.

Subsequently to this he went under the care of Dr. CANTLIE, by whom, as the case did not improve, exploratory punctures were made, and a hepatic abscess found in the axillary line. Some consolidation of the lower lobe of the lung persisted; but patient made a good recovery and is now in perfect health.

C. D., aged 28, male. Complained during July 1891 of an irritating cough, accompanied with sharp pain limited to a small area over the 9th and 10th ribs, right side, 3 inches from the spine. He attributed the onset to a prolonged stay in the river while bathing a few evenings previously.

1st August.—Had a sharp attack of fever. An area of dulness, 1½ inch in diameter, noted in the situation of tenderness; crepitant râles audible. Patient now commenced expectorating copiously muco-purulent sputum of a most offensive odour, quite free from blood. Temperature assumed a remittent type, ranging from 100° to 102°.

24th August.—Dulness extends from the base of the lung to the angle of the scapula, and outwards from the spine 7 inches. Except after coughing, breath sounds are inaudible over the area of dulness. Vocal fremitus absent. Patient cannot sleep on right side. Expectoration about 12 ounces per day—very offensive.

4th September.—Condition of chest unaltered; circumference of both sides equal. Ranges of temperature less; at times profuse sweating. As the diagnosis was by no means clear between empyema, pulmonary and hepatic abscess, an exploratory puncture was resolved upon.

5th September.—Patient put under chloroform. The needle of aspirator was inserted in the 9th interspace, at the site of original dulness, and directed forwards. No result. Punctures into the liver substance were made in two other directions, but no pus found. The needle was then inserted in the 8th interspace and pushed upwards into the lung to a depth of 4½ inches. A foul odour was immediately noticed, but no pus flowed through the canula. A few drops of blood-stained pus were, however, found in the canula, and the patient immediately coughed up some pus of the same offensive character. An incision was made and finger inserted; but as the affection was located in the base of the lung, and no adhesions had formed, it was deemed advisable not to attempt further operative interference.

6th September.—Beyond acute pain on coughing, patient has recovered well from the operation Sputum tinged with blood.

10th September.—Patient had a rigor, after which temperature rose to 105°, but soon subsided.

12th September.—Incision healed, but some swelling round it.

16th September.—Fluctuation in swelling at site of incision; about 8 ounces of most offensive pus escaped.

22nd September.—Expectoration much diminished and not offensive. Slight discharge from the opening continues.

27th September.—Opening in the back quite closed. Expectoration scanty. Breath sounds now audible over the area of dulness, which is less absolute.

In the middle of October patient was able to move about and resumed duty. In November he left the port, and since then I have had no opportunity of examining the state of his lung.

Several interesting cases have come under treatment in the Mackay Hospital. Since the introduction of a railway system accidents are of more frequent occurrence than formerly. For severe injuries to limbs, amputation at the thigh was performed on three occasions; two of the patients get about comfortably with artificial limbs. An interesting case is the following:—

In December 1891 a native about 26 years of age was travelling on board a river steam-launch, and feeling cold, sought warmth by getting near the engine. Unfortunately, his queue got entangled in the machinery, and before the engine could be stopped he was completely scalped from the eyebrows round above the ears to the back of the neck. Notwithstanding the severe nature of the injury, healing proceeded satisfactorily, except over the vertex, which was completely denuded. Skin grafts over the occipital and frontal regions materially assisted the healing process. At Chinese New Year patient left for his home in Amoy, and since then I have been unable to trace the further progress of the case.

During the autumn of 1891 I tried the effect of injections of KOCH'S tuberculin in six well-marked cases of leprosy. I give the following case as typical of its action:—

HI, aged 52, farmer; has suffered from leprosy for four years. Condition on admission:—Tubercles well marked on the back of neck (where disease commenced), alæ of nose and lips. Ears much thickened; skin of cheeks also thickened, but tubercles not marked. Hands and forearms affected up to 4 inches above the wrists; rest of arms and body free. Legs affected from 6 inches above the knee-joints downwards. Above the right ankle is an ulcer 1¼ inch in diameter. Complains of pains in the limbs, especially about the knee-joints.

11th August.—1 milligramme tuberculin injected. No reaction.

13th August.—2 milligrammes tuberculin injected. No reaction.

14th August.—4 milligrammes tuberculin injected. No reaction.

16th August.—5 milligrammes tuberculin injected. No reaction.

18th August.—1 centigramme tuberculin injected. No rise of temperature, but giddiness and malaise.

19th August.—Says he is more free from pains in the limbs and can walk more freely.

20th August.—At 1.30 P.M. 2.5 centigrammes injected, followed by giddiness. At 7 P.M. temperature 100°.3; severe pain at the site of injection.

23rd August.—At 1.30 P.M. injected 3.5 centigrammes. At 6.30 P.M. temperature 101°.5; considerable malaise.

24th August.—Considerable swelling and tenderness at the site of injection. Patient states that on the nights following the injections he has had sharp pains in the limbs. Tubercles smaller and softer. Serous discharge from tubercles on ears and from ulcer on leg.

27th August.—3.5 centigrammes injected. Temperature 101°.

31st August.—3.5 centigrammes injected. Malaise; no fever.

5th September.—4 centigrammes injected. Malaise and fever.

9th September.—4.5 centigrammes injected. Temperature 101°.8.

12th September.—Patient says he is much better, has more sensation in the limbs, can walk more freely and is able to squat in Chinese fashion, which he has been unable to do for over six months. Left for home.

16th October.—Looks much improved; says numbness is less marked and the pains in the limbs are quite gone.

The action of the remedy was marked, both as regards its effect on the system and on the local manifestations of the disease. The tubercles showed at first redness, followed after larger injections by serous discharge from those on prominent positions, such as the ears or alæ of the nose; afterwards the tubercles became softer and smaller. Pains in the limbs were relieved or abolished.

I found on the part of the patients considerable reluctance to continue the treatment for any length of time, not so much from dislike of the method as from the fact that, being farmers and quite able to work, they could not afford the time spent in hospital, and preferred to follow out their former treatment by chaulmoogra oil internally and the application of gurjun oil.

From observation of these cases I was led to the conclusion that although the remedy exercises a marked effect in ameliorating some symptoms, its action is not such as to justify our regarding it as in any way a remedy for leprosy.

Appended is a table of meteorological observations, for which I am indebted to Mr. Harbour Master TRANNACK.

METEOROLOGICAL TABLE, October 1890 to September 1892.

Month.	Wind.						Weather.			Barometer.		Thermometer.			
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Calm.	No. of Days Fog.	No. of Days Rain.	Rainfall.	Highest Reading.	Lowest Reading.	Highest Reading.	Lowest Reading.	Solar Rad. Max.	Ground Rad. Min.
1890.									*Inches*	*Inches*	*Inches*	° *F.*	° *F.*	° *F.*	° *F.*
October	23	2	...	...	6	...	...	13	12.08	30.30	29.83	90.0	54.0	162	54
November	16	2	...	...	12	...	...	8	2.03	30.45	30.05	82.0	54.0	152	51
December	19	5	1	...	5	1	1	10	4.11	30.35	30.00	81.0	50.0	148	49
1891.															
January	14	3	...	2	12	...	...	8	0.56	30.43	30.10	76.0	43.0	139	40
February	20	1	...	...	7	...	3	19	6.65	30.55	29.95	79.0	44.0	148	40
March	20	4	...	...	7	...	4	21	12.64	30.38	29.88	76.0	48.0	136	44
April	14	4	2	...	7	3	...	12	3.23	30.29	29.88	84.0	49.0	148	...
May	6	...	6	2	13	4	1	16	13.27	30.21	29.78	88.0	66.0	157	...
June	2	7	4	...	16	1	...	15	11.17	30.09	29.66	92.0	67.0	159	...
July	1	11	...	...	19	...	...	8	5.33	30.01	29.63	96.5	74.0	167	...
August	...	9	3	...	18	1	...	11	7.46	30.10	29.67	94.0	72.0	161	...
September	11	6	1	...	12	...	...	11	17.29	30.15	29.57	93.0	68.0	162	...
October	14	2	...	...	14	1	...	7	1.32	30.34	29.99	92.0	64.0	159	62
November	20	6	...	...	4	...	...	13	4.63	30.53	30.03	87.0	56.0	152	53
December	15	8	...	...	7	1	3	12	2.35	30.57	30.13	81.0	51.0	147	48
1892.															
January	18	...	...	...	12	1	...	16	5.17	30.55	30.08	78.0	48.0	142	44
February	16	4	1	...	8	...	5	19	11.04	30.45	29.80	75.0	44.0	136	41
March	19	4	...	...	8	...	5	23	9.55	30.35	29.81	78.0	45.0	140	42
April	8	6	2	...	13	1	...	8	3.06	30.40	29.95	85.0	52.0	156	51
May	10	7	3	...	11	...	...	18	14.96	30.15	29.80	92.0	58.0	150	55
June	7	3	6	...	14	...	...	10	13.72	30.03	29.72	92.0	68.0	157	65
July	4	8	4	6	9	...	...	...	...	30.05	29.43	96.5	73.0	164	69
August	1	7	11	3	9	...	...	6	3.93	30.11	29.49	96.0	73.0	160	70
September	15	6	2	3	4	...	...	16	22.08	30.14	28.80	93.0	62.0	160	59

DR. J. H. LOWRY'S REPORT ON THE HEALTH OF WENCHOW

For the Half-year ended 30th September 1892.

THERE has been a good deal of sickness among foreigners during the period under review, though the heat has not been so great as during the corresponding period of last year, nor have we had so much rain. A glance at the meteorological table shows a total rainfall of 28 inches, against 55 inches in 1891, and 73 days on which rain fell, against 98.

There has been one birth (still-born), one miscarriage and one death.

Whooping-cough was very prevalent during the months of July and August, and five foreign children were attacked; one child, æt. 4, suffered severely, the cough being very persistent, lasting over three months.

Treatment was very unsatisfactory. Antipyrin—so much praised—was tried and found useless, though pushed. Bromide of ammonium gave better results, but had to be pushed almost to bromism.

There was no epidemic of cholera in the city.

The following cases were treated during the six months just ended:—

Cerebral congestion.	Leucorrhœa.
Chronic constipation.	Lumbago.
Diarrhœa, simple and tropical.	Remittent fever.
Dislocation of shoulder-joint (reduced).	Removal of impacted fruit-stone from rectum.
Dysentery, acute.	(?) Shell-fish poisoning or irritation.
Gunshot accident (shots extracted).	Whooping-cough.
Hepatic congestion.	Worms.

(?) Shell-fish Poisoning or Irritation.—Two missionary gentlemen, residing in the same house, took tiffin with a neighbour at noon on 2nd June. At 8 P.M. I was summoned to see them and found both in great agony, and they had been so since 5.30, when vomiting and purging commenced, accompanied by violent colic. So severe were the symptoms that it was late in the night before I could leave my patients. In the morning I found both better, but exhausted, their abdomens tender, slight rise of temperature, bad taste in mouth. I was at a loss to know what had caused such violent gastric and abdominal disturbance, for the tiffin was simple enough. At the request of the gentleman at whose house the meal had been taken, I inspected his kitchen and cooking utensils. I found everything scrupulously clean, no copper utensils had been used and no tinned foods had been eaten. Shrimp curry was the only item on the menu that might have caused trouble. My patients had sat next each other, and were consequently helped to curry in succession; and it seemed possible that some of the shrimps were not fresh and that it fell to their lot to get them, the second man helping himself with the spoon his neighbour had just laid down. The party was a large one, and it is hardly likely that enough shrimps could have been purchased, at

this season, from the same basket; so they were probably mixed. Four others, including the host, partook of the same dish, and suffered no evil consequences. No meal or drink was partaken of between the tiffin and the onset of the symptoms.

Malignant Tropical Diarrhœa.—This case ended fatally. The patient was first taken ill on 30th August, and died 15th September; total number of days ill, including the one on which she died, 17. The case resembled most what Sir JOSEPH FAYRER describes in his *Tropical Diseases*, page 129. Never through the sickness did the case take on either a dysenteric or enteric form. On the 13th day a miscarriage took place and a four-month fœtus was painlessly expelled. The patient was much worn out prior to her own illness by having had to nurse her children through prolonged whooping-cough.

I append an abstract from the Customs meteorological observations taken at Wenchow (latitude, 28° 1′ 30″ N.; longitude, 120° 38′ 28½″ E.).

METEOROLOGICAL TABLE, April to September 1892.

MONTH.	BAROMETER.		THERMOMETER.		RAINFALL.	
	Maximum.	Minimum.	Maximum.	Minimum.	No. of Days on which Rain fell.	Quantity.
	Inches	*Inches*	° *F.*	° *F.*		*Inches*
April	30.170	29.850	73	55	13	4.61
May	29.990	29.600	80	64	14	5.87
June	29.944	29.820	80	73	19	7.71
July	30.030	29.600	92	75	7	1.67
August	29.980	29.700	91	75	6	3.37
September	30.170	29.570	90	63	14	5.19

Dr. ALEXANDER JAMIESON'S REPORT ON THE HEALTH OF SHANGHAI

For the Year ended 30th September 1892.

The year 1891 closed and the year 1892 opened amid continual storms. After the September typhoons a period of unusual calm, covering the whole of October, was experienced throughout the entire China Sea. In November typhoons or severe gales again prevailed, but were little felt in the immediate neighbourhood of Shanghai. December was stormy from beginning to end. The temperature was extremely variable. The first days of October were wintry, but on the 6th 85° was registered. After this the normal for the month was maintained until within the last few days, when winter again threatened. This was, however, only a threat, for the first half of November recalled an English autumn; the latter half was again cold, in consequence of the unusually high barometric pressure which prevailed. All through December, except during two brief periods of two days each (4th and 5th, and 25th and 26th), the air was mild. That which characterised the temperature of the last quarter of the year was the brusqueness of its changes. Thus severe cold in the early days of October was suddenly brought to a close by a summer break on the 6th, and three days of autumn temperature at the beginning of December were instantly followed by a period lasting from 11 A.M. on the 3rd to 10 A.M. on the 5th during which the mercury never rose so high as freezing-point. The maximum temperature registered in October was 85° F. (6th); the minimum, 48°.2 (at 6 A.M. on the 31st). The maximum for November was 75°.2 (4th); the minimum, 25°.2 (at 5 A.M. on the 26th). In December the maximum was 68°.4 (2nd); the minimum, 19° (at 4 A.M. on the 5th). The rainfall in October was exactly double the average calculated from the registers of some twenty years; it was distributed pretty evenly through the month. The first week of November was dry, followed by heavy rain on the 8th, 9th and 10th; during the latter half there were only light occasional showers. December was moderately dry, except for four brief periods, namely, the 3rd, 7th, 20th, and 29th and 30th, on which days there were heavy downpours.

The first four months of 1892 were marked by frequent, violent and widespread atmospheric disturbances. A tempest of great fury burst over Shanghai on the 3rd February, unaccompanied by rain and following a day of exceptional heat. A storm of this kind so early in the year was, on account of its rarity, altogether phenomenal. In March a heavy gale occurred on the 12th; and April was chiefly notable for a dust storm on the 2nd which enveloped Shanghai and its neighbourhood in clouds of sand during several hours. Otherwise, April was as regards atmospheric pressure, mean temperature and rainfall an average month, many storms occurring on the coast which had little effect or none upon Shanghai. May brought calm weather, broken by but one storm on the 25th; and this calm remained uninterrupted through June, except by a thunder storm in the distance on the 15th, only the echoes

of which reached us. There was one typhoon on the coast in the middle of July and, as in June, the roar of far-off thunder was often heard; but there was no great summer storm until the 6th August, when a tempest of wind and rain with thunder and lightning passed over this region. In September there was but one gale worth noticing, which occurred on the 22nd.

The temperature in January was variable, but on the whole high for the season; the maximum, 59°.5, was registered on the 24th, and the minimum, 20°.5, at 5 A.M. on the 19th. From the 8th to the 12th and from the 18th to the 22nd the night temperature was considerably below freezing-point. February did not vary widely from the average. An exceptional temperature of 61°.9 on the 3rd was followed by the violent storm already mentioned; the minimum, 21°.6, was noted at 7 A.M. on the 16th. After the first three days of March, which were mild and springlike, the rest of the month was bitterly cold, with short temporary elevations on the 11th and 12th, and the 23rd, 25th and 26th; the maximum, 66°, was reached on the 3rd, and the minimum, 26°.1, at 6 A.M. on the 7th. Spring began in April, with several hot days, the mean temperature coinciding however almost exactly with the average of many years; the maximum, 80°.6, was recorded on the 23rd, and the minimum, 37°, at 6 A.M. on the 15th. May was mild, a little colder than the average. Its maximum was 86°.7 (20th); its minimum, 41°.2, at 5 A.M. on the 3rd.

The winter and spring months showed an average rainfall. January was dry from the 3rd to the 25th, rain in moderate quantity falling at the beginning and end of the month. The total quantity registered in February was large, in consequence of torrential rains on the 7th and 13th. Fifteen days were absolutely dry, and slight showers were distributed over the remaining days. There was a light fall of snow on the 18th. March was rainy throughout. In April there were 17 dry days. Torrents fell on the 11th and 20th, and there was continuous moderate rain during the last week; brief trivial showers fell on the remaining days. May alone sufficed to carry the total rainfall for the winter and spring seasons beyond the average. In quantity the fall was double the average for 20 years, although the number of rainy days was only 10, as against the mean number of 13. On the 1st and 9th there were extremely heavy downpours, during which 65.3 per cent. of the total fall for the month was registered; the 26th and 30th contributed 29.9 per cent. of the total, and the remaining 4.8 per cent. was distributed over six days.

The summer months were unusually hot and excessively dry. In June the rainfall was one-third of the average, in July one-seventeenth, in August one-sixth and in September one-half. There was one sharp downpour on the 21st June which accounted for rather more than one-third of the entire quantity registered during the month. There were very light showers on the 1st, 2nd, 4th, 5th, 6th, 23rd and 28th July, but except for these absolute drought prevailed. So in August, there was no rain between the 9th and 24th, and only a few brief and light showers before and after that period. In September there were moderately heavy showers on the 2nd, 20th and 21st, but the rest of the month was almost absolutely dry. Meanwhile the temperature, which was about the average in June, rapidly rose through July and August, the mean of July being 2° higher than the average and that of August between 3° and 4° above that point. Autumn coolness came in with the latter half of the first week of September, and the mean for that month was 2° below the calculated average. For June the maximum tempe-

rature was 92°.8 (at 2 P.M. on the 13th and 1 P.M. on the 20th). For July the maximum was 101°.3 (at 2 P.M. on the 30th). In August the maximum, 103° (between 1 and 2 P.M. on the 5th), was the highest ever registered at Zikawei. On this day the night minimum was 81°.5. The minimum for June was 57° (at 5 A.M. on the 6th); for July, 73°.4 (at 4 A.M. on the 6th); for August, 69°.4 (at 2 A.M. on the 25th).

Some estimate of the severity of the summer as regards heat may be made from the facts that from the 27th to the 31st July the mercury never fell to 77°, and that on the 31st the night maximum was 84°.6 and the minimum 83°.5. On such nights sleep was impossible; and but for the dryness of the air the sustained high temperature of July and August would doubtless have caused many severe attacks of illness.

The maximum temperature during September was 100° (between 1 and 2 P.M. on the 2nd), and the minimum, 51°.8 (between 5 and 6 A.M. on the 30th). From the 6th onward the mercury, except on one or two occasions, never reached 86°.

There is little of importance to note as regards the prevalence of disease during the last quarter of 1891. A wide range of temperature with sudden changes, common at all seasons of the year in Shanghai, but especially during the early part of winter, accounted for the frequency with which affections of the air passages were encountered. Feverish colds, that is to say, catarrhal attacks accompanied by fever and more or less severe muscular pain with insomnia and loss of appetite, were common, and were generally called influenza; but the epidemic character was altogether wanting, and so long as this enters into the definition of influenza, such fugitive maladies, which moreover are little if at all infectious and are never followed by any of the serious chronic affections which often succeed influenza, must remain as a group which may be described so as to be recognised but which does not fall readily into any accurate system of classification. Many cases of true bronchitis came under treatment, along with a few of pneumonia. Tonsillitis in its various forms, with or without patches on the mucous membrane, was extremely common. Simple diarrhœa, dysentery of a mild character, hepatic congestion and muscular rheumatism, along with malarial fevers, completed the list of diseases of most frequent occurrence. In the group of malarial fevers I personally had a disproportionate number of cases of true remittent, without any suspicion of typhoid; but this was probably an individual and accidental experience, as I was unable to find that this form of fever was in any marked degree prevalent.

During the first quarter of 1892, although chicken-pox could hardly be said to be epidemic among children, several cases were observed; typhoid fever became more common than it was in the earlier months of winter, and malarial affections, often of indefinite character, were widespread. The prevailing type of disease was, however, catarrhal. Thus, to say nothing of the heavy "feverish colds" which are labelled "influenza," conjunctivitis, pharyngitis with or without tonsillitis, bronchitis, pneumonia, diarrhœa and the inflammatory form of enteric flux which is often called dysentery mainly filled the sick lists. The so-called influenza was specially prevalent in January, but in no case that I saw or heard of was it followed by any of the nervous or other symptoms which are the ordinary sequelæ of the true "epidemic catarrh" which has in late years proved so formidable and fatal in Europe and America. I am not aware of any fatal case having occurred among foreigners in Shanghai.

Taking now the summer months, one is struck, on going over any carefully kept record of cases from day to day, by the very slight difference introduced into its general form by the wide range of meteorological conditions throughout the year. Thus the catarrhal affections noted as prevalent in winter were observed with almost equal frequency during summer, but in addition to the inflammatory diarrhœas of the cold months several cases of true dysentery presented themselves after May. Malarial fevers were of very frequent occurrence, but, judging solely by my personal experience, typhoid fever, though never absent, was rare. The intense heat of July and August was of course not without effect in producing much "heat malaise" of greater or less intensity, along with several cases of genuine "heat stroke," of which one at least proved fatal. Many of those who suffered in varying degrees from the high atmospheric temperature were rendered specially sensitive to its influence by contemporaneous alcoholic excess, by chronic alcoholism or by chronic malarial infection. Among women I observed several instances of hysteria obviously attributable to exposure to heat; and menorrhagia has also to be noted as frequently due to the same cause. Hepatic and renal congestion even in severe forms may often be traced to surface chills acquired either by lying drowsy or asleep in the comparatively cool night air in perspiration-soaked clothes, or by sleeping in bed under a punkah the intermittent action of which, as some accident wakes the coolie, suddenly cools the sleeper and checks the action of his skin. One menacing case of acute nephritis which occurred in my practice last year could be ascribed to no other cause than this; and although the case in question terminated favourably, a like accident happening to an old, broken-down or alcohol-soaked person would probably prove swiftly or remotely fatal. Sleeplessness and boils are usually counted among the minor items in the list of inevitable summer dangers and discomforts; yet they are not by any means insignificant, each in its way rendering the nervous system irritable and diminishing the power of resistance in face of more obviously serious affections. During these summer months there was no true epidemic. A few cases of varicella occurred in April, and, probably by accident, a very large number of patients presented themselves to me in April and May with pityriasis versicolor. In June several children suffered from whooping-cough, and in September there were many cases of measles, attacking, in several instances within my experience, children who three months before had passed through whooping-cough.

On the whole, however, there was a striking uniformity in the nature of disease throughout the year. We associate the incidence of small-pox with cold weather, of cholera with autumn and the latter part of summer, of malarial fever with the changes of season. But during the year under review cholera, which disappeared in November 1891, was completely absent throughout 1892; and that small-pox was neither severe nor widespread is attested by the fact that the total mortality was two, both cases occurring in sailors, one in April and one in May. With regard to the diseases which are constantly present, season appears to have little influence on their incidence. Diarrhœa occurs at all times in the year, and if in summer and early autumn it is somewhat more frequent and more prone to put on an inflammatory form, the reason is the same as that above assigned to explain the frequency of visceral congestion at the same season. Several cases of true dysentery were observed, but the majority of the patients seen by me suffering from dysenteric symptoms were in fact suffering from inflammatory diarrhœa, speedily yielding to saline treatment with opium in very moderate quantity. Malarial and

typhoid fevers were distributed throughout the year, as also were acute pulmonary and rheumatic affections, and very frequent inflammatory affections of the pharynx.

The mortality returns for the year are in accordance with the conclusions drawn independently from clinical lists.

DEATHS of FOREIGNERS from 1st October 1891 to 30th September 1892.

CAUSE OF DEATH.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	TOTAL.
Small-pox	...	...	...	...	...	...	1†	1*	...	...	...	...	2
Measles	...	...	1†	...	...	...	...	...	...	...	...	...	1
Enteric fever	1 1*	1	1†	1	...	...	1	1	...	...	1	1	9
Remittent fever	...	...	1	...	...	...	...	...	...	...	1†	...	2
Diphtheria	...	...	...	...	...	2†	...	...	...	...	...	...	2
Tuberculosis	...	...	...	...	...	...	...	1*	2*	...	...	...	3
Phthisis	...	1	...	1	1	1*	...	2	...	...	1	1 1*	9
Bright's disease	...	1*	1	...	1	1	1	1	...	...	1 1*	...	8
Cholera	1 2*	1*	...	...	...	...	...	...	...	...	...	...	4
Scorbutus	...	...	...	...	...	...	...	...	...	...	1*	...	1
Alcoholism	1	...	1	...	...	...	...	...	...	...	2	...	4
General debility	...	...	...	...	...	...	1	...	...	...	1	...	2
Infantile marasmus	...	...	...	1†	...	...	...	...	...	...	...	...	1
Meningitis	...	1 1*1†	1	1†	...	...	1†	...	...	1†	...	...	7
General paralysis	...	...	...	...	...	...	...	...	...	...	1	...	1
Apoplexy	1†	...	...	1	...	...	...	...	...	...	...	...	2
Cerebral embolism	...	...	...	...	...	...	...	...	...	...	1	...	1
Insolation	...	...	...	...	...	...	...	...	...	1*	...	...	1
Locomotor ataxy	1	...	...	...	...	...	...	...	...	...	...	...	1
Heart disease	1*	1	1 1*	...	...	...	...	...	1*	1	1	1	8
Aneurism	...	...	...	...	...	...	...	...	...	1	...	...	1
Cyanosis	...	...	...	...	...	...	...	...	1†	...	...	...	1
Bronchitis	...	...	2	1†	...	1†	...	...	...	...	...	...	4
Respiratory spasm	...	...	...	1†	...	...	...	...	...	...	...	...	1
Atelectasis	...	...	...	...	...	...	...	...	...	...	...	1†	1
Tonsillitis	...	...	...	...	...	...	...	...	...	...	1	...	1
Enteritis	1	...	...	1†	...	...	...	...	...	...	...	...	2
Diarrhœa	...	1	...	...	...	...	...	...	1	...	...	...	2
Infantile cholera	1†	...	...	...	1†	...	...	...	...	1†	...	...	3
Dysentery	1	...	1 1†	...	...	...	...	...	...	...	...	1*	4
Obstruction of bowels	...	...	...	...	...	1*	...	...	...	...	...	...	1
Abscess of liver	1*	...	...	...	...	1	...	...	...	...	...	...	2
Strangulated hernia	...	...	...	...	...	...	...	...	...	...	1*	...	1
Tumour	...	...	1*	...	...	...	...	1	...	1*	1	...	4
Asphyxia	...	...	...	1†	1	...	...	...	...	...	...	...	2
Accident and injury	1	...	...	...	1*	...	...	1	...	1*	...	1	5
Drowning	...	1*	...	...	...	...	...	...	1*	1*	1*	...	4
Not certified	...	1	...	...	...	...	2	...	...	1 1*	...	...	5
TOTAL	14	11	13	9	5	7	7	8	6	10	16	7	113

* Non-residents (31). † Children (23).

614.0951

CHINA.

IMPERIAL MARITIME CUSTOMS.

II.—SPECIAL SERIES: No. 2.

MEDICAL REPORTS,

FOR THE YEAR ENDED 30TH SEPTEMBER 1893.

45th and 46th Issues.

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INSPECTOR GENERAL'S CIRCULAR No. 19 OF 1870.

INSPECTORATE GENERAL OF CUSTOMS,

PEKING, 31*st December* 1870.

SIR,

1.—IT has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to
- Season.
- Alteration in local conditions—such as drainage, etc.
- Alteration in climatic conditions.

e.—Peculiar diseases; especially leprosy.

f.—Epidemics
- Absence or presence.
- Causes.
- Course and treatment.
- Fatality.

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking. I have committed to Dr. ALEX. JAMIESON, of Shanghai, the charge of arranging the Reports for publication, so that they may be made available in a convenient form.

3.—Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr. ....., and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 30th September—that is, for the Winter and Summer seasons.

4.— * * * * *

I am, etc.,

(Signed) ROBERT HART,
I. G.

THE COMMISSIONERS OF CUSTOMS,—*Newchwang*, *Ningpo*, *Tientsin*, *Foochow*, *Chefoo*, *Tamsui*, *Hankow*, *Tainan*, *Kiukiang*, *Amoy*, *Chinkiang*, *Swatow*, and *Shanghai*, *Canton*.

SHANGHAI, 15*th May* 1895.

SIR,

IN accordance with the directions of your Despatch No. 6 *A* (Returns Series) of the 24th June 1871, I now forward to the Statistical Department of the Inspectorate General of Customs, the following documents:—

Report on the Health of Chungking, pp. 2, 3;

Report on the Health of Pakhoi, pp. 8–11; each of these referring to the year ended 31st March 1893.

Report on the Health of Tientsin, p. 1;

Report on the Health of Wenchow, p. 21; each of these referring to the half-year ended 31st March 1893.

Report on the Health of Wuhu for the eighteen months ended 31st March 1893, pp. 4–7.

Report on the Health of Chefoo, pp. 22, 23;

Report on the Health of Shanghai, pp. 34–38; each of these referring to the year ended 30th September 1893.

Report on the Health of Ichang, pp. 24, 25;

Report on the Health of Kiukiang, pp. 26–28;

Report on the Health of Wuhu, pp. 29, 30;

Report on the Health of Wenchow, p. 31;

Report on the Health of Foochow, pp. 32, 33; each of these referring to the half-year ended 30th September 1893.

Notes on Diseases in North Formosa, pp. 12–20.

I have the honour to be,

SIR,

Your obedient Servant,

R. ALEX. JAMIESON.

THE INSPECTOR GENERAL OF CUSTOMS,

PEKING.

The Contributors to this Volume are:—

A. IRWIN, F.R.C.S.I. ..... Tientsin.

JAMES H. MCCARTNEY, M.D. ..... Chungking.

ROBERT H. COX, L.R.C.P.I., L.R.C.S.I. ..... Wuhu.

A. SHARP DEANE, L.R.C.P.I., L.R.C.S.I. ..... Pakhoi.

ALEXANDER RENNIE, M.B., C.M. ..... Tamsui.

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T. RENNIE, M.D., CH.M. ..... Foochow.

R. ALEX. JAMIESON, M.A., M.D., M.R.C.P. ..... Shanghai.

DR. A. IRWIN'S REPORT ON THE HEALTH OF TIENTSIN

For the Half-year ended 31st March 1893.

DURING the period under notice the health of the foreign community has been very good.

Two deaths occurred, one from puerperal convulsions and one from malignant scarlet fever.

A mild epidemic of influenza prevailed among the infantile portion of the community.

I append an extract from Dr. ROBERTSON's health report on Tongshan for 1892. Dr. ROBERTSON, in his annual report on the working of the Tongshan Hospital, reports favourably on the health of the foreign residents.

In the early part of 1892, chiefly in February, and following in the track of influenza, which was epidemic both among foreigners and Chinese, a severe form of tonsillitis broke out among the coolie class, the throat affection in most cases being attended with unusually high fever and the congestion being so great as to cause severe dyspnœa. Both tonsils were usually affected and covered with a thick, tenacious secretion, diphtheritic in appearance, which failed to yield readily to treatment.

One foreigner succumbed to typhus fever.

Five births are recorded among the foreign residents; and during the summer two infants died from dysentery.

Dysentery, although prevalent among the coolies, was not so severe as in former years; and it is to be hoped that, owing to waterworks having been established and a main laid on to the village, dysentery and diarrhœa will be much less rife than formerly.

A comparison of the maximum and minimum temperatures between Tientsin and Tongshan was kept during June and July, and shows a lower temperature, on the average, in Tongshan.

The attendance at the out-door department of the Tongshan Hospital has increased considerably; and during the past year many accidents from the coal-pits and railways have been treated in the wards, where several operations have been performed.

It is to be hoped that the Imperial Railways extension to Shanhaikwan will afford facilities for the opening up of a seaside health resort for the Tientsin and Peking residents. Yang-ho-k'ou, a small port situated 15 miles south-west of Shanhaikwan, is suggested as a suitable spot, as it possesses a fine sandy beach and good water supply, and is only about 3 miles from the railway station, which can be reached in a little more than half a day from Tientsin.

DR. JAMES H. McCARTNEY'S REPORT ON THE HEALTH OF CHUNGKING

For the Year ended 31st March 1893.

IN beginning my brief Report, I wish to reaffirm what I have previously said, that Chungking, from its natural position, is more healthy than the average Chinese city.

There has been an unusual amount of sickness during the past year among both natives and foreigners. When foreigners fall sick here the cause, however, is generally other than climatic.

One foreign death occurred during the year (from cholera) and one birth.

The Customs staff has, as a rule, been healthy, with the exception of one member, who, having had cholera followed by chronic diarrhœa, was transferred, as a matter of necessity, to another port.

The diseases most prevalent in the Chungking district are the different forms of lung lesion, of which emphysema, bronchitis and phthisis constitute at least 99 per cent.

The contagious diseases commonly observed are small-pox, measles and chicken-pox. Typhoid is unknown. All forms of malaria are present, but that most frequently met with is a pernicious intermittent, which is very fatal among the natives.

Skin diseases, chiefly the different forms of tinea and itch, are common. I have seen four or five cases of lichen scrofulosus and three or four cases of leprosy; two of the latter were of the tuberculous and the others of the anæsthetic form. These were the only cases seen among several hundred skin patients. They did not remain long under treatment. The cases of lichen scrofulosus yielded readily to iodide of potassium internally and tar ointment externally.

Malarial diseases are most prevalent during autumn and winter.

In July and August the city was visited by an epidemic of cholera, the first for five years. The cause, no doubt, was the filthy condition of the streets and the extreme dampness and heat of the atmosphere. Reports vary as to the mortality, some placing it as high as 1,400. Among the foreigners there were three cases, with one death. I had about 20 cases, with 50 per cent. of recoveries. The treatment found most satisfactory was drachm doses of compound opium mixture (Squibb), and in case of collapse, hypodermics of ether and the hot pack. The disease always proved fatal in opium-smokers.

During the year some interesting surgical cases were under treatment.

I.—A boatman some months previously had dislocated his left hip. Attempts at reduction had been frequently but fruitlessly made, with and without chloroform. I at length decided to cut down and divide the Y-ligament of BIGELOW. When the head of the bone was exposed, the ligamentum teres was found to be ruptured and the acetabulum obliterated by inflammatory material which had been produced months before. It therefore seemed that resection of the head of the bone would offer the patient a surer

chance of a movable joint. This was accordingly done; the leg was placed in a fracture box and extension maintained by weights. In two months a long side splint was applied and the man was allowed to get about on crutches. The shortening will be about 1 inch, with perfect motion.

II.—A boy, 12 years old, highly scrofulous, with necrosis of the neck of the femur. The head of the bone was removed about ¼ inch below the great trochanter. Recovery in this case was slow, on account of the condition of the patient. He commenced to improve as soon as the bone was removed, and is now in good health, with a movable joint, but considerable shortening.

III.—A middle-aged boatman presented himself with the following history. About eight years ago he stepped on a nail, the nail penetrating the heel. The wound healed, but always gave him trouble. About a year ago he noticed a tumour springing from the spot where the nail had entered, which steadily, but almost painlessly, increased in size. A short time after the tumour appeared he noticed that the glands in the inguinal region were enlarging. I advised removal of the growth and glands, to which he consented. He made a good recovery, without any signs of a return of the tumour, which proved to be a sarcoma.

During the year 115 major operations and over 400 minor operations were performed.

METEOROLOGICAL TABLE, July to December 1892.

MONTH.	THERMOMETER.		BAROMETER.		RAINFALL.
	Highest.	Lowest.	Highest.	Lowest.	
	° F.	° F.	*Inches*	*Inches*	*Inches*
July	100	74	28.86	28.68	2.28
August	101	76	28.96	28.72	4.85
September	98	63	29.34	28.82	2.23
October	88	58	29.40	28.96	4.00
November	72	45	29.50	28.82	3.06
December	61	42	29.62	29.18	1.45

The above table was kindly furnished by Mr. LOVATT, of the Chungking Customs.

DR. ROBERT H. COX'S REPORT ON THE HEALTH OF WUHU

For the Eighteen Months ended 31st March 1893.

THE general health of the community of this port (now numbering 70 persons) for the above-mentioned period has been below the average of the last five years.

There were two births.

Two deaths occurred, both missionaries, one from enteric fever and the other from dysentery, for the medical treatment of the latter of which no aid was sought till the patient was *in extremis.*

Four cases of dysentery, two of enteric fever, one each of gonorrhœal rheumatism, pneumonia and renal colic, and several of malaria and diarrhœa were among the diseases treated.

A few cases of influenza and measles occurred on shore, but neither disease took the form of an epidemic.

For almost the whole time under review there has been at least one foreign gun-boat in port. On one of these, H.B.M.S. *Peacock*, a case of cholera occurred on the 5th October 1891, with a fatal issue in eight hours. No further cases occurred till the 20th, when there were two more deaths, and a third man was attacked but recovered. The German gun-boat *Wolf*, *en route* from Shanghai, brought here for burial the body of one of its sailors who died from the same disease. These, with the pilot of the s.s. *Fooksang*, who died on the 13th August 1891, made the number of burials in our new cemetery four from cholera; and, with the deaths of the two residents from enteric fever and dysentery, six in all within 12 months.

As there was no cholera among foreigners or Chinese on shore, it is difficult to account for the occurrence of the disease, but the supposition that the beer which the deceased sailors were known to have drunk at the local compradors' shops was diluted with foul water is the most probable explanation. Steps were taken to prevent the spread of infection from the ships to the shore. The houses which the sailors had frequented for the purpose of refreshment and the drink said to have been supplied were examined; the bakehouses were also inspected, and though the water used in making the dough might be of better quality (it being river water with the suspended matter precipitated by means of alum), nothing could be discovered to throw light on the source of the disease. After the departure of the *Peacock* for Chefoo there were no further cases. I must again allude to the advisability of having a place for the treatment of infectious cases and for the prevention of the spread of diseases liable to become epidemic.

Influenza made its appearance on board the French gun-boat *Inconstant* during her stay here from the 22nd to the 31st March 1892, when about half the ship's company were

attacked. They were treated at the hospital at I-chi-shan, which probably accounted for the occurrence of influenza among some of the foreign residents there later.

With the exception of the houses occupied by the Commissioner of Customs, British Consul, American Methodist Episcopal, Jesuit and Foreign Christian Missions, which are all well built and situated, the residences of the community are far from satisfactory. Over two-thirds of the foreigners here are quartered either in Chinese houses or in jerry-built houses constructed with little regard to climate or sanitary conditions. With such a state of things, zymotic diseases are inevitable.

Among the Chinese there was no serious epidemic during this period. Some cases of influenza and measles, however, were treated. Small-pox appears, of course, every winter. No cases of true cholera were observed.

The following surgical and midwifery cases are of some interest:—

Strangulated Hernia with Ulceration of the Intestine.—A Chinese farmer, aged 23, who had suffered from rupture since infancy (father and two brothers also affected), was admitted to the Wuhu General Hospital. Ten days previous to admission he had acute dragging pains in the tumour and abdomen, which, along with absolute constipation and frequent vomiting, had since continued. On examination the patient was found much emaciated, with tense protruding abdomen, weak thready pulse, dry brown tongue, and temperature 100°.4. The tumour was situated in the right groin, passing into the scrotum, was about the size and shape of a good-sized pear, and of almost cartilaginous hardness. As the patient's death, if unrelieved, seemed certain, I decided, notwithstanding his low condition, to operate at once. After thorough disinfection, and the administration of ether by Dr. STUART, a vertical incision 2½ inches long, with its centre over the external ring, was made through the skin. The coverings were then carefully divided on a director and the sac opened, exposing the gut, healthy in appearance. No vessels of importance enough to require ligatures were met, the slight hæmorrhage being controlled by pressure forceps. The external ring was small, not admitting the point of the finger. It was divided by an incision directly upwards. As the tumour still felt tense, an exploration of the sac was made, which revealed a very tight constriction some distance down its neck (*i.e.*, hour-glass constriction). This was also divided, with the result that a quantity of coffee-coloured fluid of a most offensive odour escaped. The incision was enlarged downwards, when the bowel was found ulcerated, and gangrenous below. As the patient showed alarming signs at this point, the anæsthetic was discontinued and restorative means were resorted to. On his rallying, the gut was quickly secured to the walls of the wound, which was then closed above by two silk sutures, and a large drainage-tube was inserted through the lower portion into the body of the sac. The wound was dressed with iodoform and absorbent wool, while a sponge was placed to catch the discharge from the drainage-tube, and directions given for its frequent removal and cleansing. Hot-water bottles were placed in the patient's bed and brandy and water given occasionally. The patient passed a good night and his appearance was much improved the following day, when the sac cavity was washed out and charcoal poultices applied. He was placed on milk diet. His condition continued favourable for the week succeeding the operation, the temperature ranging from 99° to 102°.

On the seventh day a diffuse swelling was first noticed between the great trochanter and the anterior superior spine, extending upwards beyond Poupart's ligament. Next day this showed a gangrenous point and was opened, when pus mixed with fæces was evacuated. A counter-opening was made at the most dependent part and a drainage-tube inserted. From this time the patient's condition improved. Fæcal matter escaped through the abscess cavity and at the seat of operation, and the fluid injected through the latter found a free vent from the former. A month after the operation the patient's friends considered

he was well enough to spend the Chinese New Year at home, and, in opposition to advice, removed him. A week later he was reported dead.

The mortality of this condition is very high—nearly 90 per cent. Owing to the extreme weakness of the patient, no elaborate operation could be performed. The appearance of the swelling on the seventh day was evidently due to the giving way of the coats of the paralysed gut above the ring. Recovery was expected as almost certain, and the premature departure of the patient, with the hardships of the journey, may be looked on as the cause of his death.

Maltreated Shoulder Presentation.—A Chinese woman, aged 23, married six years, the mother of two children, had been 54 hours in labour before my arrival. The membranes had been ruptured and a hand had presented for nearly 48 hours. The native midwives, in trying to assist nature and the patient, had wrenched the arm from the child at the elbow-joint. On my arrival I found the right shoulder of the child in the pelvis, with the remnant of the arm well down in the vagina. The labia were very œdematous. A couple of teaspoonsful of brandy were given and chloroform administered, which was easily taken. The patient was then moved to the edge of the bed, in the dorsal position, with the legs drawn up and supported. I then passed my hand, with difficulty, into the uterus, and after some time succeeded in grasping a leg (the left); then by pressing on the humerus, while my assistant aided by external rotation, the child was turned and the leg brought down. Chloroform was stopped after grasping the leg. Intermittent traction was employed while the patient was recovering from the effects of the anæsthetic, and the latter part of the delivery was accomplished by her expulsive efforts, aided only by the bringing down of the left and mutilated right arm. Fair contraction was obtained by friction of the uterus, there being no ergot at hand, and in half an hour the placenta was expressed by CREDÉ'S method. The uterus was washed out with carbolic lotion, and a binder applied. The patient was then placed in the semi-reclining position adopted by Chinese after parturition. The injection was repeated for four days. The patient made a good recovery.

Transverse Presentation; Right Arm and Right Foot prolapsed.—A Chinese woman, aged 38, multipara, had been in labour three days. The membranes had ruptured on the second day and the right hand of the child appeared at the vulva. On the morning of the third day the right foot also came down, both protruding—the hand blue and swollen and the foot white and bloodless—on my arrival in the evening. The patient, under the influence of chloroform, was brought to the edge of the bed, in the dorsal position, and supported on either side. When the urine was drawn off, a tape was fastened to the presenting foot by a clove-hitch. I then passed my right hand into the vagina, using the prolapsed arm as a guide, and made pressure with my fingers on the presenting ribs, while at the same time external pressure was made in a similar direction above the pubis with the left hand. After this had been continued for some time, with the right hand still in the vagina continuing the pressure, I pulled on the foot and tape with the left, and, as there were signs of yielding, also grasped the leg higher up with the right hand in the vagina, with the result that the leg and breech came down without much difficulty. The arms were brought down and the head followed, face to perinæum, without further trouble. The child was dead and the cord decomposed. The fluid following the birth was very offensive, from the meconium and products of putrefaction. There was no hæmorrhage. Ergot was given and the placenta expressed by CREDÉ'S method. The parts were then washed with warm carbolic acid lotion. The injection was continued for three days, and the patient regained her usual health without a bad symptom.

The following may act as a warning against the use of fire without proper ventilation:—

Poisoning by Charcoal Fumes.—A Chinese comprador on board a rice steamer loading at this port was, with a friend, allowed to occupy one of the passenger cabins during a very cold night in January last. He took in with him a small charcoal hand-warmer. In the morning suspicions were aroused by hearing laboured breathing in the cabin, the door of which (being locked on the inside) was at once broken open

and the inmates taken on deck. On my arrival I found the comprador—who had been lying on the settee, a foot or so from the ground—dead, and his companion, who was lucky enough to have chosen the upper berth, still breathing in the stertorous manner which had attracted attention. He was unconscious, with flickering pulse and dilated pupils. An inhalation of nitrite of amyl improved his breathing somewhat and caused an evacuation of the contents of the stomach, consisting of undigested rice. A blister was applied to the præcordia and hot-water bottles to his feet and body, while his limbs were vigorously chafed. Towards evening he was conscious and out of danger.

I append an abstract from the Customs meteorological observations, for which I am indebted to Mr. KINDBLAD, Acting Tidesurveyor and Harbour Master.

METEOROLOGICAL TABLE, October 1891 to March 1893.

MONTH.	THERMOMETER.		BAROMETER.		RAINFALL.
	Maximum.	Minimum.	Maximum.	Minimum.	
1891.	° F.	° F.	Inches	Inches	Inches
October	84	49	30.312	29.960	5.39
November	83	26	30.814	30.200	1.07
December	70	21	30.732	29.930	1.40
1892.					
January	62	20	30.750	30.000	0.46
February	63	20	30.651	29.753	3.18
March	72	22	30.551	29.732	2.35
April	89	33	30.513	29.610	5.92
May	91	44	30.420	29.712	4.09
June	92	55	30.100	29.510	3.69
July	100	68	29.970	29.600	2.80
August	100	70	29.983	29.690	4.73
September	97	52	30.530	29.706	2.72
October	83	41	30.500	30.000	0.28
November	79	24	30.653	28.832	1.04
December	64	25	30.742	30.053	0.68
1893.					
January	57	11	30.612	29.980	4.52
February	48	28	30.610	30.100	1.23
March	79	27	30.494	29.850	1.90

DR. A. SHARP DEANE'S REPORT ON THE HEALTH OF PAKHOI

For the Year ended 31st March 1893.

DURING the year since my last Report the health of the foreign residents and native population of this district has been very satisfactory; the latter escaped the epidemics usual at the change of the seasons, and no case of serious illness took place among the former.

One foreign male child was born.

Catarrhal affections of the air passages were prevalent during January and February, owing to sudden changes in the temperature; but all the cases were of a very mild character.

Diarrhœa, generally due to indiscretions in diet, was observed in July and August.

Two cases of a remittent type of fever occurred during October, supposed to be the result of chill caught in the evening after exposure to the sun on a trip into the country.

A general feeling of malaise; scanty, high-coloured urine; constipation and frontal headache for two days preceded the rise in temperature, which gradually reached 104° on the evening of the fifth day. The evening temperature fell steadily from the seventh day, and both cases were convalescent in 12 days dating from the first rise of temperature. The early morning temperature throughout the course of the fever stood at 99° or 100°.

A variety of herpes worthy of mention has been met with in seven cases during the past four years, occurring between the months from June to September. The localities affected were—

(1.) The anterior surface of the forearm, about 2 inches above the wrist, in one or two patches more or less uniformly circular.

(2.) The outer surface of the arm, just below the triceps, in one or two patches, longer than they were broad, from 1 to 2½ inches in length.

(3.) The forehead, anterior and lateral aspects of the neck and behind the ears—in two, three or more lashes, as from the cut of a whip; straight as a rule, but sometimes zigzag or curved; running in any direction, or even crossing each other, as I have seen them on the side of the neck. These lashes vary in length from 2 to 7 inches, by about ⅛ to ⅓ of an inch in width, usually widest in the middle and tapering towards each end.

(4.) On the back of the neck, in one or two patches resembling those on the forearm.

(5.) On the leg. I met with one case in which the disease covered the anterior and outer surface from a little below the knee to the external malleolus.

In all the cases, no matter what the site of the affection, the symptoms and course were the same:—

A red spot first appeared, spreading towards the circumference in the case of the patches, or if on the face or neck it spread quickly lengthwise, forming a lash. On the second day of the eruption the skin was bright red, hot and itchy. During the following day vesicles appeared, and soon after a burning sensation set in, which was most severe in the patches on the wrist and on the back of the neck, in

consequence of these parts being exposed to the friction of the clothing. The burning sensation lasted about two days, and was followed by itchiness. The vesicles did not burst; their contents became milky, and they then dried up and the colour changed to a dark red. In the course of about 10 or 12 days, if the part was not scratched, the cuticle separated in one sheet, leaving a clean, unbroken surface of a dirty red colour which gradually faded away in about six or seven weeks.

This affection was most prevalent during the hot season of 1889, but I have had cases of it since. The disease did not seem to depend upon the state of the patient's health, but looked very much like a mechanical variety of herpes, possibly the result of contact with some insect.

Follicular abscesses of the external auditory meatus, ranging in size from a pin's head to that of a grain of No. 2 shot—not an uncommon affection here,—at times produce extreme agony.

In such cases I have found calcium sulphide, in hourly doses of $\frac{1}{8}$ of a grain, to be a most efficacious remedy, leaving nothing to be desired, and far superior to anodynes of any kind, hot fomentations, leeches, blisters, etc. Under this treatment the pain ceases in a few hours, resolution quickly follows, and it only remains to give a suitable tonic to bring to an end, in a few days, a condition too often of protracted duration.

Gonorrhœa is so common an affection that it is often looked upon as being of minor importance; and the patient not taking that care of himself which he should, the disease lingers on for months, and in some cases for over a year.

In its treatment under a tropical climate it is of the first importance that the patient should micturate copiously. Most men when constantly perspiring, as they do here, pass urine but three times in the 24 hours, in quantities of about 6 or 8 ounces at a time. It is of high specific gravity and colour, and is very irritating to an inflamed urethra. This, to my mind, explains most of the protracted cases; and I find that the disease will seldom last longer than from 16 to 22 days if the patient is inclined to carry out his instructions.

To commence with, stimulants are strictly forbidden; the diet is regulated; a suspensory bandage is worn; and no active exercise, long standing or walking is allowed. The patient should drink at intervals, daily, until a week after the discharge has ceased, as much barley water as he possibly can, except for an hour and a half before and after meals. If this does not cause a free discharge of pale, watery urine, small doses of citrate of potash added to the barley water will usually produce a copious flow. He should take 5 grains of the salicylate of soda three times a day, and use as an injection a warm solution of perchloride of mercury, of a strength of 1 in 20,000 of water, four or five times a day for three days (the injection may be commenced from the first appearance of the discharge). On the fourth day, unless contra-indicated, which I have seldom found it to be, the strength of the injection is raised to 1 in 16,000. From the sixth and every second day after, the water is diminished by 1,000, until the injection reaches 1 in 8,000, beyond which strength it is unnecessary to go. Usually, however, before this strength has been reached the discharge has ceased; but the patient should be cautious as to his mode of living for a couple of weeks longer, and continue to use for a while the injection at 1 in 16,000.

When this treatment is strictly carried out, gonorrhœa is not a protracted affection, and I have had no relapses among many cases treated during the past four years.

The native population in the immediate neighbourhood has not been visited by any epidemic since influenza was prevalent during February last year; but in a district near An-p'u (安鋪), about 100 miles to the east of this port, bubonic plague carried off a large number of people during March and April.

I am informed by one of the French missionaries who has resided for many years in the neighbourhood of An-p'u that bubonic plague is endemic in a small district near that place, and that isolated cases will be found there at any time of the year, but that during the early spring of some years the disease occurs as an epidemic, and then the only chance of escape is to leave the district until after heavy rain has fallen.

Syphilis, in a mild form, is one of the most common affections met with; in fact, the population of the town may be said to be syphilised, and to this may be due the success attending the treatment of syphilis at the hands of the native medicine vendors, who are dealing with a modified form of the disease.

I have under daily observation four natives who contracted syphilis some three years ago, and who, as soon as the secondary eruption appeared on the face and limbs, consulted a Chinese doctor, and in the course of about a month were cured. They were, before they had the disease, and are still, as healthy-looking fellows as one could wish to see.

As a curiosity, I append copies of the prescriptions with which the men referred to were treated. The first is said to be the most efficacious, simply because it contains pearls and is more costly, thereby enhancing its virtue to no mean extent; it also causes less pain and griping than the second prescription, as the dose of the different ingredients is smaller.

℞ No. 1.—*Chung-ju-shih*, 鐘乳石 (stalactites—carbonate of lime), 0.10; *niu-huang*, 牛黃 (cow bezoar), 0.05; *hu-ma*, 胡麻 (linseed), 0.15; *ping-p'ien*, 冰片 (Baroos camphor), 0.03; *hu-p'o*, 琥珀 (amber), 0.05; *mo-yao*, 沒藥 (gum myrrh), 0.10; *shê-hsiang*, 麝香 (musk), 0.04; *ta-huang*, 大黃 (rhubarb), 0.50; *lien-ch'iao*, 連翹 (dried capsules of *Forsythia suspensa*), 0.10; *ti-ting*, 地丁 (a kind of herb), 0.10; *huang-pai*, 黃柏 (bark of the *Pterocarpus flavus*), 0.15; *chên-chu*, 珍珠 (pearls), 0.06; *t'u-pieh*, 土鱉 (a kind of beetle), 0.15; *chih-tzŭ*, 梔子 (berries of the *Gardenia florida*), 0.15; *san-hsien-tan*, 三仙丹 (red oxide of mercury), 0.03; *huang-lien*, 黃連 (root of the *Chelidonium majus*), 0.10; *shan-chia-p'ien*, 山甲片 (scales of the manis), 0.10; *huai-hua*, 槐花 (flower-buds of the *Sophora japonica*), 0.15; *t'ien-ch'i*, 田七 (root of the *Gynura pseudochina*), 0.15; *hsiung-huang*, 雄黃 (yellow sulphide of arsenic), 0.05; *ju-hsiang*, 乳香 (gum olibanum), 0.10. The ingredients are powdered and made into a mass with rice paste, and divided into pills, each weighing about 2½ grains.

℞ No. 2.—*Ts'ang-shu*, 蒼朮 (root of the *Atractylis ovata*), 0.30; *mu-t'ung*, 木通 (a species of clematis), 0.30; *kan-ts'ao*, 甘草 (liquorice root), 0.20; *hsiung-huang*, 雄黃 (yellow sulphide of arsenic), 0.30; *ch'ang-shan*, 常山 (root of the *Dichroa febrifuga*), 0.30; *shêng-ti*, 生地 (root of the *Rehmannia glutinosa*), 2.00; *huang-lien*, 黃連 (root of a species of *Chelidonium majus*), 0.30; *chin-yin-hua*, 金銀花 (flowers of the *Lonicera chinensis*), 0.30; *san-hsien-tan*, 三仙丹 (red oxide of mercury), 0.20; *shan-chia-p'ien*, 山甲片 (scales of the manis), 0.15; *ch'ê-ch'ien-tzŭ*, 車前子 (seeds of the *Plantago major*), 0.30; *ta-huang*, 大黃 (rhubarb), 0.30; *kuei-pan*, 龜板 (shells of the land tortoise), 0.30; *pieh-chia*, 鱉甲 (shells of the fresh-water turtle), 0.30. The ingredients are powdered and made into a mass with honey and sugar, and divided into pills, each weighing about 2½ grains.

The dose of either of the above mixtures is 10 to 15 pills, to be taken before each meal. In the case of the first, the patient, having taken the pills for a few days, is directed to be careful to wash out his mouth frequently with water in which green peas have been boiled.

Some strange substances enter into the composition of these pills, but it will be noticed that both formulæ contain arsenic and mercury. The course of treatment lasts for only 8 or

10 days, the patient being then given a tonic mixture, which completes the cure in about a month or six weeks; and as far as my observation goes, with reference to the above-mentioned four men, I must certainly say the results were most satisfactory.

With the exception of the latter part of the year, we experienced no abnormal changes, the four seasons following each other without any unusual atmospheric disturbance; and rain fell in sufficient quantities until October. During January we had strong northerly winds, and on the 16th of that month—although the appended thermometric readings do not show it—there was hard frost for 20 hours, which gave the most beautiful yet strange effect to the scenery of a country essentially tropical. Fine rain fell for some hours before the frost set in, and in consequence all the bamboos, palms, cacti and screw-pine (a wild variety of pineapple) were sheeted with ice, and every tree and shrub had large stalactiform masses of ice hanging from its branches. No one who had not actually experienced it could believe that the temperature would fall so low in a place so far south. Old men of the place said they had never witnessed anything like it before, and these, along with women and children, were busily engaged gathering the icicles into bottles. Some of the people did not even know what ice was, but simply said it came from heaven and that they heard the water therefrom was good for fever during the fifth and sixth months.

A slight shock of earthquake was felt at 11.15 P.M. on the 19th March, being the second that has been experienced here within the past two and a half years. Such a shock if it occurred during the busy hours of the day would pass unnoticed, and it is probable that many vibrations do occur of which we are unaware.

METEOROLOGICAL TABLE, April 1892 to March 1893. (Latitude, 21° 29′ N.; longitude, 109° 6′ E.)

Month.	Thermometer.			Rainfall.	Month.	Thermometer.			Rainfall.
	Highest.	Lowest.	Mean.			Highest.	Lowest.	Mean.	
1892.	° F.	° F.	° F.	Inches	1892.	° F.	° F.	° F.	Inches
April	93	56	75.70	2.66	November	89	50	71.55	0.87
May	93	64	79.90	11.58	December	75	45	56.76	2.13
June	93	71	83.60	24.94					
July	95	74	83.68	14.39	1893.				
August	94	72	82.82	23.34	January	80	32	57.90	0.37
September	98	65	80.80	9.20	February	72	43	54.16	1.10
October	90	60	76.05	0.44	March	81	46	63.58	2.69

NOTES ON DISEASES IN NORTH FORMOSA.

By ALEXANDER RENNIE, M.B., C.M.

IN discussing the distribution and prevalence of disease in Formosa, we may be pardoned for briefly alluding to the fact that the island is both geographically and to a certain extent ethnologically distinct from the mainland of China, and that consequently the types of certain diseases existing on the mainland may be considerably modified or even absent, and *vice versâ*.

(1.) GEOGRAPHICALLY.

Separated from the nearest point of the mainland by a channel only 70 miles in width and connected by a submarine bank submerged at a depth possibly not exceeding 40 fathoms, Formosa would at first sight appear to have been united to the mainland of China at no very remote geological epoch. For instance, we know that Borneo, which is separated from the Malay peninsula as well as from Java and Sumatra by a sea about 350 miles across and of almost similar depth to the shallow part of the Formosa Channel, formed part of the Asiatic continent at a comparatively recent period, from the fact that the species of plants and animals are almost as similar as though no separation existed. But if, instead of the depth of the intervening sea, we take the amount of individuality of the flora and fauna as a more reliable measure of the period of isolation, Formosa must be classed as one of the oldest of the so-called recent continental islands. For evidence bearing on this subject we are almost entirely indebted to the collections of SWINHOE and the researches of WALLACE concerning the geographical distribution of animals. From these we gather that although the chief types of existing Asiatic mammalia are found in Formosa, still out of 35 species 14 are peculiar, while out of 128 species of land birds no fewer than 43 are peculiar, to the island. Apart, however, from this striking difference in organic forms, a more suggestive feature is the affinity or identity of several with Indian, Malayan and Japanese species; in fact, as regards the avifauna, more than half have their nearest allies in those remote regions rather than in the adjacent continent. An examination of the Formosan lepidoptera bears out this affinity even more strongly.

So with the flora. Possessing much in common with the adjacent mainland, the vegetation generally is more tropical, while such plants as the rattan, the betel palm and the *Musa textilis*, which are Malayan forms and absent from the adjacent mainland, flourish luxuriantly. Making all due allowance for the part played by wind and tide in the transmission of seeds, plants or insects from the Malay Archipelago northwards, the general affinity is too marked to be explained by these natural agencies: it implies geographical continuity in the past.

To account, therefore, for the prevalence of Malayan and Indian forms, we must assume that Formosa formed part of the mainland at a period when Japan, Hainan and the islands of the Malay Archipelago were still attached to the continent, and that the species which

these remote parts now possess in common were then distributed over the intervening area. Subsequent to the separation these species became extinct on what is now the mainland of China, but preserved their individuality in the dense forests of the Himalayas and these remote islands. Formosa especially, with its partly tropical climate and lofty forest-clad mountains, afforded the necessary immunity from those adverse conditions that tend to the modification or extinction of a species.

Doubtless, in the line of the Bashee and Babuyan Islands, a direct connexion existed with the Philippines, which were in turn united to Borneo by way of Palawan and Sulu, and thus Formosa was in contact with what is now the Malay Archipelago. When this connexion was interrupted is a question of some difficulty. The greater depth (over 100 fathoms) of the intervening sea would lead us to suppose that the separation of Formosa from the Philippines occurred long prior to the date of its separation from the mainland; but, on the other hand, from Formosa southwards there are evidences of powerful volcanic action, which would explain the greater upheaval and subsidence necessary to effect this separation in a shorter time. Elevated coral formations in the southern portion of Formosa point to that recent submersion and subsequent elevation which is so marked in the Philippines, and which has led to the flora and fauna of the latter islands differing so markedly from those characteristic of the Malay Archipelago. Briefly, then, we infer that Formosa had a land connexion both with the mainland of China and with what is now the Malay Archipelago, and so formed a border of the once great Malayan extension of Asia; but evidence is lacking to show when the Malayan connexion was severed. Taking, however, into account the rapid changes produced by powerful volcanic action, it may be reasonable for us to suppose that this connexion persisted for some time after the separation of Formosa from what is now the mainland of China.

(2.) Ethnologically.

Broadly speaking, we may divide the inhabitants of the island into aborigines and Chinese.

(*a.*) *Aborigines.*—Whether these so-called savages are the descendants of the original inhabitants of the island or have supplanted a race long extinct is an unsettled point. However, we may assume that those occupying the mountains of the interior are the most typical of the existing races, from the fact that in these remote retreats they have been less exposed to the conditions that modify a species on the borders of civilisation. From these tattooed and untamed savages to the quiet and industrious dwellers in the lowlands, who in dress, habits and mode of life approximate to their Chinese neighbours, all phases of the civilising process may be seen. The former are named by the Chinese Chihoans, or unripe barbarians, while the tribes of the latter are variously known as Sekhoans, or ripe barbarians, Pepohoans, or barbarians of the plains, etc. The different tribes vary considerably in appearance and physique, but, generally speaking, the civilised aborigines, reared on a fairly substantial diet of rice and farm produce, compare favourably in this respect with their kinsmen on the mountains, who, subsisting chiefly by the produce of the chase, eked out by a scant supply of mountain rice or millet, are, from their arduous life, of slighter build but more wiry and

enduring. In spite of the many distinctions in dress, customs, dwellings, language and physical characteristics, a close comparison shows the many tribes to belong to one race and to be most nearly related to the Malays. They have thus been grouped as Malayo-Polynesian—a term which is, however, linguistic rather than racial, and used to include all the Oceanic races, with the exception of Negritos, Papuans and Australs. A wider knowledge has led modern ethnologists to limit the term Malay: it no longer denotes a fundamental type. They view the inhabitants of Malaysia as an intermingling in various proportions of three distinct races—the Mongolian, the Caucasian and the dark (Negrito or Papuan). Just as the fusion of all three has produced the tribes found in Eastern Malaysia, so the fusion of the two former has produced the Malay as we meet him in the west. According as the yellow or white element predominates, the nearer is the approach to the Mongolian or Caucasian type. Briefly, the true Malay is a variety of the Mongolian type.* The Malayan race as a whole closely resembles the East Asian populations from Siam to Manchuria.† The Formosan aborigines exhibit, in colour, language and type, differences sufficiently marked to warrant us in assuming that, though they are of Malayan origin, they are not all descended from the same stock.

Taking into consideration the migratory instincts of mankind, it is more reasonable for us to suppose that the Formosan aborigines are the descendants of immigrants driven hither by wind and wave from various points in the Pacific Ocean. Especially is this supposition probable as regards the tribes occupying the lowlands along the east coast, some of whom preserve traditions of their arrival from over the sea and, though not now a seafaring people, still commemorate the event. Even within the past 20 years natives of the Loochoo, Pelew and Philippine Islands have been driven by stress of weather on this coast. In 1886 we met one of the latter who had arrived in this manner 16 years previously; he still retained traces of his Tagalog dialect, but to outward appearance was indistinguishable from the Pepohoans among whom he lived.

(*b.*) *Chinese.*—According to their own records, the earliest knowledge the Chinese possess of Formosa dates from about A.D. 1430; and although from time to time junks got driven on the coast, and many settlers found employment during the Dutch occupation of the island, it was not until the expulsion of the Dutch by KOXINGA, in 1661, that emigrants from the mainland arrived in any number. The original settlers hailed from the neighbourhood of Amoy, and ever since the tide of emigration has been steadily flowing from Fuhkien, so that the prevailing dialect and customs are those of that province. The descendants of these settlers constitute the bulk of the agricultural and labouring classes, while there are a goodly number of northern men in official and military service, as well as Cantonese who engage in mercantile pursuits. In addition, there is a large Hakka population. The original Hakka settlers were drafted here years ago by the Kwangtung authorities, on account of lawlessness in that province; the congenial nature of the life has induced many of their friends to follow them. They are a hardy and industrious race. Settled along the savage borders, they form a buffer between the more timid Fuhkien settlers and the aborigines, and whether engaged in the camphor trade or reclaiming new territory, are the pioneers of Chinese civilisation.

* Professor KEANE, in *Nature*.

† WALLACE, *Malay Archipelago*.

Before proceeding to remark on the diseases prevailing on the mainland and in Formosa, it may not be out of place to allude briefly to the climate of the island. That of the northern part, to which our subsequent remarks on disease apply, is subtropical and differs considerably from that of the south, both in a lower mean temperature and a greater rainfall. The climate is considerably affected by the Kuro Siwo, or Japanese current—the Eastern homologue of the Gulf Stream,—which flows northwards along the east coast. During the north-east monsoon the wind blowing over this heated current gets surcharged with moisture, which it deposits as rain on the hills in the north of the island; consequently the rainfall in the north is abnormally heavy, that of Tamsui being about double that of the corresponding mainland, while the yearly rainfall of Kelung is close on 150 inches, about two-thirds of which fall between October and March. Formosa has appropriately been said to act as an umbrella to the adjacent mainland.

I.—Leprosy: Elephantiasis Græcorum.

Frequency.—Taking the seven years 1886–92, the proportion of leprosy cases to the total of all other diseases treated in the native hospital at Tamsui was 0.9 per cent.—a small percentage when compared with the returns from some of the hospitals on the mainland. (*Cf.* Canton hospital, 1892, 6 per cent.; Swatow, 1888, 4.8 per cent.)

Distribution.—Lepers are found all over the cultivated parts of the north of the island, but certain of the older villages are noted for possessing more than an average ratio. These villages are not to be regarded as so-called leper retreats, to which victims flock when conscious that they have contracted the disease, but simply as foci where cases of the disease have multiplied, these villages having been tenanted by ancestors of the lepers for several generations. It is not our object here to discuss the evidences of heredity or contagion, but merely to draw attention to the disease as it affects the different peoples. The greater number of cases are furnished by the agricultural population, who are the descendants of the settlers from Fuhkien, and the Hakkas, both of whom are affected in about equal proportion. A most noteworthy fact is that no cases have been met with among the aborigines. Of the diseases of the uncivilised aborigines little is known, but among the 30,000 or more Pepohoans who are scattered over North Formosa we have had abundant opportunities for observation, both in hospital practice and when visiting their villages. We have never seen a single case; and this observation is corroborated by the Rev. Dr. Mackay, who informs us that during the 20 years he has worked among these people he has not seen a single leper. When we remember the rapidity with which leprosy spread among the natives of the Sandwich Islands subsequent to the arrival of the Chinese in 1848, this fact is very striking, especially to those who are not inclined to regard this spread as a mere coincidence, but as due to a contagium conveyed in the persons of the immigrants or to some article of diet introduced by them. There, a race untainted by the disease prior to 1850 presented 15 years later, among a population of 67,000, no fewer than 230 lepers; here, in North Formosa, Chinese have been settled for over 200 years, mixing and to a slight extent intermarrying with the aboriginal tribes, and yet, so far as we are aware, no case of leprosy has been recorded among the latter.

2.—Elephantiasis Arabum and Lymph Scrotum.

Frequency.—In seven years, 1886–92, only six cases presented themselves for treatment at the Tamsui native hospital—a per-centage of 0.03. In the parts of the Fuhkien province from which most of the Formosan settlers are derived the disease is a most common one (in Amoy hospital about 2 per cent.). Of the six cases, four were suffering from elephantiasis of the leg and two from lymph scrotum.

Distribution.—Of two patients we obtained no history; one was a visitor from Canton; while the remaining three were settlers from Fuhkien and had most probably contracted the disease before leaving that province. I append brief notes of one case:—

Poah, aged 34, farmer; formerly resided in Chinchu (Fuhkien), but six years ago came to Formosa. When about 18 years of age he began to have attacks of intermittent fever, which frequently recurred. The groin glands enlarged during attacks of fever, but subsided afterwards, each successive attack leaving them larger. Is quite positive that the disease commenced at Chinchu, where, he says, it is very common. No family history.

12th September 1889.—Removed scrotum, weighing 8½ lb.

5th October.—Patient left for home.

On several evenings the blood of this patient, and also that of another who resided for a short time in hospital, was examined microscopically, but on no occasion was the filaria sanguinis hominis observed.

It appears, therefore, that this affection is exceedingly rare, if not entirely absent, in the case of those born in and never resident out of the island. This circumstance is possibly explained by the curious fact that the filaria-nurturing mosquito which forms the intermediary host of the parasite is not native to Formosa.*

3.—Parasitic Hæmoptysis, produced by the Distoma Ringeri vel Pulmonale.

A full account of this parasite, simultaneously described by Dr. Manson and Professor Baelz, may be found in the Customs *Medical Reports*, xx and xxii.

Frequency.—Of patients attending the Tamsui hospital about 0.9 per cent. are affected. The affection is, however, more common than these figures show, many regarding it as too unimportant to require treatment.

Beyond the expectoration of dull brick-red sputum, laden with the characteristic ova, the symptoms and signs of the presence of the parasite in the lungs may be *nil*. After remaining thus quiescent for months or even years, some exciting cause, such as violent exertion or shouting in a fit of anger, may produce most serious hæmorrhage. As seen in Formosa, the disease does not seriously interfere with the duration of life. It may co-exist with tubercular disease of the lungs, as in the following case:—

Kao, aged 33, Hakka female; suffered from hæmoptysis for six years. Ova abundant. Dulness over right apex. Tubercle bacilli in sputum.

8th August 1891.—Injected 1 milligramme Koch's tuberculin. No reaction.

10th August.—Injected 2 milligrammes Koch's tuberculin. Temperature at 8 P.M., 101°.8. Malaise, cough and expectoration of blood so free as to forbid a continuance of this treatment.

* Dr. Myers, Customs *Medical Reports*, xxi and xxiii.

Distribution.—The chief centre is Hsin-chu (Teckcham), on the west coast, but the disease is fairly common over the north of the island, affecting both Chinese and Pepohoans alike. We have not observed a case among the uncivilised aborigines of the mountains. Chinese from the mainland are prone to contract the disease. As Dr. MANSON has shown, the ova are readily hatched in water, and in this vehicle the embryo may enter the human subject. It is most probable, however, that before being able to maintain its existence in the human lung it has to undergo further development in some intermediary host; it may thus be swallowed with the host, or in water into which it has escaped from the host. Otherwise, it is difficult to understand why the affection has not extended to the mainland of China, whither so many have returned affected from Formosa and have continued to expectorate ova-laden sputum, which would readily become water-borne. The stray cases we have met on the mainland have all a history of former residence in Formosa. The disease seems to be limited by the geographical distribution of the intermediary host—whatever that may be—to Japan, Corea and Formosa. This fact is interesting, in view of the evidence as to a previous land connexion of Formosa with Japan. This connexion doubtless existed by way of the Meiaco Sima and Loochoo Islands, but, from the comparatively slight similarity in species, must have been interrupted long prior to the separation of Formosa from the mainland and from Malaya. It is somewhat remarkable that parasitic hæmoptysis has not been reported from the Philippine or other islands lying in the same volcanic belt as Formosa and Japan.

4.—TINEA IMBRICATA.

The first case of this epiphytic skin disease noted in China is the one described by Dr. MANSON. His patient had contracted the affection in Singapore, whence he had returned to Amoy 17 years previously. Struck at once by the appearance of the affection as contrasted with ordinary body ringworm, Dr. MANSON, on examination, recognised certain distinctions which he regarded as sufficiently important to justify a separate nomenclature. As compared with tinea circinata, these differences are briefly as follows:—Tinea imbricata avoids hairy situations, does not extend deeper than the mucous layer of the epidermis, the fungus is more abundant, the chains of spores are more numerous than the mycelial threads, and the spores are usually oval or rectangular, rarely globular.*

Dr. TILBURY FOX, however, regards the affection as ordinary body ringworm, flourishing more luxuriantly on account of a moister climate and personal habits, and classifies it, along with other Eastern forms of ringworm, under the heading of tinea circinata tropica. Dr. GUPPY, who most fully describes the disease as seen by him in the Solomon Islands, appears to favour the latter view, remarking that when the white man there contracts the affection it manifests itself in the form of "dhobie itch."

Frequency.—About 0.9 per cent. of the patients attending the Tamsui native hospital are affected; but this by no means represents the frequency of the disease. The chief centres are distant two or more days' journey—a distance which precludes many from seeking relief

* Customs *Medical Reports*, xvi.

from the itching they complain of in hot, moist weather. From the hospital reports we find that tinea circinata is approximately five times more frequent than tinea imbricata.

Distribution.—The affection is comparatively rare among ordinary Chinese, who suffer chiefly from the common body ringworm, but is extremely common among the Pepohoans of the Kapsulan plain and the Hakkas, who are brought most in contact with the aborigines. The aborigines of the mountains appear to suffer much less than the civilised aborigines of the plains.

Whether or not the distinctions alluded to above are sufficiently marked to warrant a separate designation, the appearance of the affection is striking. In extreme cases the whole body, except the scalp, presents a furfuraceous appearance, owing to the loosened epidermis, which is arranged in a series of wavy lines with a more or less concentric pattern—circles start from various centres and meet each other. After a few baths in the sulphur springs, whither we usually send these patients for preliminary treatment, the loose epidermis is detached, leaving the skin less rough and displaying admirably the highly ornamental pattern which represents the mode of extension of the fungus.

Personal habits seem to bear little relation to its spread. In a tribe of semi-civilised aborigines inhabiting the Kilai plain, on the east coast, we found quite 6 per cent. affected, and yet these are the most cleanly people we have seen on the island. Every village possesses its separate bathing-places for men and women, whither they repair for the daily bath, and they are just as cleanly in their dress and household arrangements as they are regular in their ablutions.

The affection is undoubtedly the one we so often come across in the narratives of travellers visiting the islands of the Pacific Ocean and erroneously called by them ichthyosis, pityriasis versicolor, psoriasis, etc. It is identical with the affection known in Polynesia as Tokelau ringworm. Within the memory of man it has invaded several of these islands, notably Samoa and Tokelau, where it was previously unknown, and thence may be traced back to its source in the Solomon Islands, where Dr. GUPPY estimates that about two-fifths of the population are affected.*

Coming to the Malay Archipelago, which more immediately concerns us, we find reference made by WALLACE to "the scurfy skin disease so common amongst savages." † He seems to be of opinion, however, that the affection bears some relationship to diet, the well-nourished Malay or Dyak suffering slightly as compared with tribes obliged to subsist on badly cooked green vegetables.

In DAMPIER'S *Voyage round the World* reference is made to the disease as the narrator observed it in Mindanao and the Ladrones.

It will be gathered, therefore, that the affection is one essentially peculiar to Malays and Papuans; that it may spread to Chinese living under the same climatic conditions; and that whether or not the fostering cause may be the moist, warm climate, the fungus flourishes with a luxuriance not observed on the mainland of China.

* For further references, see *Notes by a Naturalist on the "Challenger,"* MOSELY; also *Cruise of the "Marchesa,"* GUILLEMARD.

† *Malay Archipelago.*

The spread of the disease is somewhat interesting on account of its bearing on the origin of the Formosan savages. Throughout the Malay Archipelago and Polynesia its spread appears to be co-extensive and contemporaneous with the migrations of settlers from island to island across wide tracts of sea, and so no doubt it was introduced into Formosa by the representatives of one or more of the present tribes whose original home was one of the Pacific Islands.

5.—Fevers.

Any notes on the diseases of Formosa would be incomplete without a reference to the fever which has earned for the island such an unenviable reputation. All forms of malarial intermittent are common, but the tertian type is most frequently met with. The severe bilious remittent and continued forms from which foreigners suffered so much in the earlier days after the opening of the port are now extremely rare. The latter was characterised by high fever with no remission, violent gastric disturbance and brain symptoms.*

Among the Chinese we have occasionally seen a fever of this type; it is extremely fatal and uninfluenced by the ordinary remedies for malarial fever. A genuine case of typhoid we have not seen; but since, as regards foreigners, the field of observation is very limited, and as regards Chinese, the diagnosis, in the absence of unequivocal symptoms or a postmortem examination, is open to doubt, one cannot dogmatise on the point. Generally speaking, foreigners suffer much less from malaria than in former days—an improvement due probably to better house accommodation and improved hygienic surroundings.

Frequency.—About 25 per cent. of the patients attending the Tamsui hospital suffer from diseases of malarial origin—a per-centage far higher than anywhere on the mainland. This greater prevalence may be accounted for by the volcanic soil, by the rank vegetation resulting from the excessive rainfall, and chiefly by the fact that, as regards cultivation, the island is comparatively new, having been mostly virgin soil prior to the advent of the Chinese, about 200 years ago.

Distribution.—The most unhealthy districts are the valleys between the hills and the flat lands lying between the mountains and the sea, such as in the Kapsulan plain and the neighbourhood of Tamsui.

It is interesting to note the degree in which the different inhabitants are affected. One would naturally expect to find the aborigines of the mountains enjoying the greatest immunity, but when we take into account their precarious existence and comfortless dwellings in the damp forest, we need not wonder that they are in this respect little better off than the civilised aborigines of the lowlands. Most of the latter occupy the villages dotted over the Kapsulan plain—an extremely fertile country on the east coast, north of Su-ao Bay. They are agriculturists, and raise their rice and other crops in the Chinese style. To this mode of farming they are comparatively strange, for although a good deal of land was under cultivation during the Dutch occupation of the island, it is not likely that an irrigation system was adopted by these Pepohoans until after the arrival of the Chinese. A traveller through the plain at once notes

* Dr. Johansen, Customs *Medical Reports*, xxviii.

the anæmic appearance of these people. The healthiest appear to be the semi-civilised tribes occupying the lowlands along the east coast. Their houses are constructed of wood, with floors of rattan raised 2 feet above ground; the thatch is sufficiently thick to defy the heaviest rainfall, and altogether their dwellings are models of comfort and cleanliness. They raise excellent crops of millet, Indian corn, peaches and other fruits, but employ no irrigation system. They are well nourished, and both in healthy appearance and physique present a most striking contrast to their anæmic Pepohoan neighbours.

Of the Chinese, northern men suffer most severely, especially the soldiers, who are mostly natives of Anhwei and adjoining provinces. On arrival they are strong, healthy men, who appear to have suffered little, if at all, from malaria. Having to live mostly in earthworks, their surroundings are very unfavourable. They succumb readily to attacks of fever, while those less severely affected convalesce slowly, developing a well-marked malarial cachexia, with intense anæmia, swelling of the lower limbs and puffing of the face—an appearance simulating beri-beri. Albuminuria and paralytic symptoms are absent. The mortality in the summer months is excessive.*

Chinese native to the island suffer in a less degree. Through residence for several generations they have undergone a gradual process of acclimatisation, and so have acquired a partial immunity. Splenic enlargement, often extreme, and irrespective of age, is quite a common condition among them. In appearance and physique they are decidedly inferior to the northern men. Attacks of fever are more rare and less severe, but, on the other hand, they suffer much from rheumatism, brow-ache, neuralgia and other masked forms of malaria.

* Customs *Medical Reports*, xx and xxxiv.

DR. J. H. LOWRY'S REPORT ON THE HEALTH OF WENCHOW

For the Half-year ended 31st March 1893.

IN spite of the very severe winter, there has not been a great deal of sickness among the foreign residents of this port. Not for over 20 years has the district experienced such cold weather. The Chinese suffered severely, and I believe there were many cases of frostbite, though only two came under my notice.

There has been one death, from enteric fever.

The following cases have been under treatment:—

Amputation of fingers.	Frostbites.
Bronchial catarrh.	Palmar abscess.
Cardiac failure.	Pleuritis.
Chronic dysentery.	Pulmonary congestion.
Enteric fever.	Stabbing wounds of face and back.

Enteric Fever.—The patient was a chief petty officer of H.B.M.S. *Linnet*. He was landed from the ship on the 26th January, having been ill since the 10th January, and he died on the 2nd February. No postmortem was made, but from the collapse at the end it was clear that perforation had taken place.

Appended is an abstract from the Customs meteorological observations taken at Wenchow (latitude, 28° 1′ 30″ N.; longitude, 120° 38′ 28½″ E.).

METEOROLOGICAL TABLE, October 1892 to March 1893.

MONTH.	BAROMETER.		THERMOMETER.		RAINFALL.	
	Maximum.	Minimum.	Maximum.	Minimum.	No. of Days on which Rain fell.	Quantity.
1892.	*Inches*	*Inches*	° *F.*	° *F.*		*Inches*
October	30.336	29.890	80	60	2	2.05
November	30.486	29.670	76	42	15	2.60
December	30.500	30.030	63	36	5	1.70
1893.						
January	30.500	29.950	63	25	5	1.67
February	30.490	30.028	59	33	14	5.06
March	30.500	29.820	70	40	18	4.01

REMARKS.—15th and 16th January: snow, 1 inch. 12th and 14th February: snow, 2 inches.

DR. E. W. VON TUNZELMANN'S REPORT ON THE HEALTH OF CHEFOO

For the Year ended 30th September 1893.

DURING this period the health of the foreign community at Chefoo has been good. Nothing worthy of particular note has occurred, except a small outbreak of typhoid fever in the last quarter of 1892 (four cases) and a somewhat more extensive one of measles (10 cases) in the spring of 1893. In the latter case the infection spread from the Collegiate School to the children in the Settlement.

The number of visitors during the summer was considerable. Excluding those who came in a bad state of health, to recuperate, they for the most part enjoyed good health, no serious cases of illness coming under my care.

Two deaths have occurred among the residents—one from drowning, one (a member of the Customs out-door staff) apparently from cardiac failure; he was found dead in bed, to which he had retired the previous evening, after long exertion and exposure to a bitter wind and rough sea, without any complaint of ill health. Another death, of a visitor, is elsewhere referred to.

Eight births have taken place, five females and three males. The mothers have all had normal recoveries.

One child, a female, died three hours after delivery. The mother was an elderly woman, in indifferent health. The first stage of labour lasted for nearly three days, inefficient pains coming on at long intervals and dying away without succeeding in rupturing the membranes, though the presentation was normal and there was no obstacle to delivery. Finally, the membranes were ruptured and the child extracted with forceps without difficulty. It was nearly asphyxiated when born, and though resuscitated by artificial respiration, lived only for three hours.

The other cases were normal in all respects, except that in one the arm presented externally and podalic version was required. There was also one premature delivery, at the sixth month, on the third day after the onset of typhoid fever; the mother recovered.

A somewhat curious fact may here be noticed. Two of these eight mothers were Japanese, and they nursed their children without difficulty. With the six European mothers it was otherwise. The one whose child died had no milk at all, a phenomenon readily explicable by the state of her health; the other five, however—all of whom were in good, most of them in robust, health,—were unable to nurse their infants for more than a few weeks, the milk rapidly failing both in quality and quantity. Whether this is usual among European women in China I do not know. Its explanation, if bringing it into relation with other phenomena of similar import may be considered an explanation, is probably to be found in DARWIN'S well-known

observations on the extreme susceptibility of the reproductive system to changed conditions of life. If it proved to be the usual result of these changed conditions, its importance, as bearing on any question which might in the future arise as to the suitability of China as a habitat for our race, is very obvious.

In conclusion, I am anxious to acknowledge my indebtedness to my friend and colleague, Dr. DOUTHWAITE, of the China Inland Mission, for invaluable assistance on many occasions.

TABULAR STATEMENT of CASES treated in the CHEFOO GENERAL HOSPITAL.

Case.	DISEASE.	Sex.	OCCUPATION.	Days in Hospital.	RESULT.
1	Typhoid fever	Female		22	Recovery.
2	" "	Male	Sick-bay staff, R. N.	25	"
3	Remittent fever	"	I. M. Customs staff	6	"
4	Typhoid fever	"	Clerk	23	"
5	Dysentery, chronic	"	Officer, merchant marine (English)	13	"
6	Pneumonia and delirium tremens	"	I. M. Customs staff	28	"
7	Varioloid	"	Merchant	21	"
8	Intermittent fever	"	Officer, merchant marine (Russian)	14	"
9	Typhoid fever	"	Sailor, Japanese navy	6	Death.
10	Bright's disease	"	Officer, revenue steamer *Feihoo*	10	"
11	Dysentery, acute	"	Officer, merchant marine (English)	14	Recovery.
12	" chronic, and hepatic abscess	"	Clerk	3	Still in hospital (30th Sept.).

REMARKS.—Case No. 9 was admitted in an almost moribund condition, delirious and extremely feeble. Case No. 10 on admission was very anæmic and dropsical, urine very scanty and loaded with albumen. Two years previously he had suffered severely with similar symptoms; had never been well since. Total suppression of urine occurred on the fourth day after admission. He was kept alive for six days, chiefly by means of jaborandi, supplemented occasionally by hypodermic injections of pilocarpin. Ultimately he died of uræmia. Case No. 12 was a visitor from Shanghai. His dysentery speedily ceased under treatment, but symptoms of hepatic abscess supervened, and on 12th October he left by steamer for Shanghai, where he died about a fortnight later.

DR. E. A. ALDRIDGE'S REPORT ON THE HEALTH OF ICHANG

For the Half-year ended 30th September 1893.

THE following abstract is from the meteorological observations taken at the Custom House:—

METEOROLOGICAL TABLE, April to September 1893.

MONTH.	THERMOMETER.				BAROMETER.		RAINFALL.	
	Highest.	Lowest.	Average Highest.	Average Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
	° F.	° F.	° F.	° F.	Inches	Inches		Inches
April	98.0	46.0	72.3	58.7	32.24	29.58	8	4.09
May	99.5	51.0	84.0	63.0	30.08	29.52	12	7.25
June	102.0	60.0	85.8	69.7	29.93	29.58	11	6.89
July	101.5	70.0	94.7	75.3	29.75	29.42	15	9.67
August	104.0	69.0	95.8	74.6	29.92	29.37	4	2.50
September	99.0	59.0	85.6	66.6	30.08	29.71	10	6.76

The summer, preceded by an unusually warm spring, was short in duration and the heat was never particularly trying. This was the result of plenty of rain, which always has the effect of lowering the temperature for some days, and thus it is that a wet summer is welcomed by foreigners at Ichang. The rainfall was 37.16 inches, falling on 60 days, during 336 hours.

The health of foreigners has during the last six months been good. There were two births—one male, one female. There was one death, from malarial fever with dysentery. The more important diseases attended were—

Dysentery, 2 cases; remittent fever, 1; intermittent fever, 3; gravel, with the passage of calculi large enough to twice cause temporary stoppage of urine from impaction in the urethra, 1; bronchitis, 1; fractured rib, 1.

The fatal case was that of an energetic medical missionary, not three years resident in China, who through the summer had been overworked, often having to expose himself to the sun or be for hours in close, unhealthy apartments in the native city, and this was most injurious to one who had naturally a weak heart. When summoned to see him on 26th August, he was found to have a very feeble, quick, hardly-countable pulse, high fever and dysenteric motions. The dysentery was soon stopped by opium and ipecacuanha, but quinine had little effect on the temperature. Digitalis and stimulants were administered to keep up the circulation, and paraldehyde in full doses was given to relieve the insomnia,

which was the most distressing of the symptoms present. But all was of no avail, death taking place early in the morning of 30th August.

I have never known less sickness among the Chinese. A cool summer generally means an unhealthy one at Ichang, but this year was an exception. There was no return of the 1892 cholera epidemic, and there was very little of the usual malarial fevers. The country-people had a very prosperous year, their three principal crops, wheat, rice and cotton, being remarkably good. There has been general contentment, with the result that a better feeling was shown towards foreigners.

DR. GEORGE R. UNDERWOOD'S REPORT ON THE HEALTH OF KIUKIANG

For the Half-year ended 30th September 1893.

THE health of foreigners residing at this port has, during the past six months, been about the average. We had a comparatively cool summer, and people generally have suffered less from the effects of heat than in 1892.

As usual, we were fortunate in having no epidemic of any kind. There were three cases of typhoid fever, two in the Concession and the third in the city. In all, the disease ran a favourable course, with the exception of one, in which necrosis of a portion of the tibia was a sequela. With several possible sources of origin, it is most probable that river water, contaminated by the excreta of typhoid patients in native boats anchored in the creek above the Concession, was the medium by which the contagium was carried in two of the cases. At the same time, it must not be forgotten that our milkmen, who live outside the Concession, are Chinese, and do not recognise, in washing their dairy utensils, any important difference between water apparently pure and water which has been boiled. It would be unfair to them to suggest a more direct use of impure water, because the milk supplied is certainly good and there is plenty of it. In the Concession there is, fortunately, no system of drainage except for rain water, refuse water being emptied into the river; so that sewage gases do not count in the etiology of disease. With regard to the case which occurred in the city, as it entails much less labour on the water coolies to get the domestic supply from a well near at hand than from the river, whence they ought to bring it, one can readily understand the cause. In the city, too, one may be poisoned by sewer gas. Last year a foreigner living in a native house there had a severe attack of typhoid. His bedroom was close to the flagged front courtyard of the house, and in a corner of this court the shutters used for enclosing the guest hall in winter were piled up. The patient got well; and cold weather coming, he had the shutters taken from the corner. Soon after his attention was attracted to a flag—in the corner—which had a stone resting on it, and around this stone the surface of the flag was always damp. Under the stone was a round opening, 2 inches wide, and from this came an odour which had often been noticed without the cause being discovered. The flag was raised, and on digging a little a large brick-built sewer was exposed, which ran across the court parallel to the street close by, and doubtless across the courts of adjoining houses. It was only partially closed, and the stench was intolerable. The foreigner changed his residence as soon as possible. There were no cases of other continued fevers.

Twenty-three residents—a large proportion in a population of 100—had malarial fever in one form or other. In most instances it might be described as "a touch of fever," lasting for a day or two only. Two cases were more persistent, and in one of them the temperature

rose daily to 104°–105°, falling afterwards to 98°.4–99°. Quinine proved effectual after seven days. The other patient had repeated attacks during the summer, and arsenic had a better effect than quinine. A change to Chefoo completed the cure.

For the Chinese in and around Kiukiang the season was certainly an unhealthy one. Continued fevers were prevalent, and in the autumn the number of those who suffered from malarial affections was quite beyond the average. 3,854 patients came to the hospital for treatment, and of these, 461 were taken in. Many of these latter were kept in only one or two days, for some minor operation. 504 came suffering from ague. The varying ratio between the different forms of this affection as the season went on is very interesting. In the first three months, quartan was the more prevalent; but in the last three, tertian and quotidian predominated enormously.

	Quotidian.	Tertian.	Quartan.
April	3	3	24
May	4	7	16
June	4	17	7
July	27	55	8
August	32	111	22
September	53	101	9

There were a very few cases of mixed forms.

Sixty-nine cases of continued fever—typhoid, typhus and simple continued—were treated. These ailments were very prevalent outside, and only a small proportion came to the hospital, the majority of those who came being men whose homes are at a distance and who earn their living in Kiukiang. Those living in the neighbourhood, when very ill and not expecting to recover, prefer to stay at home and die there, and even of those in the hospital, when there is no longer any hope, a large proportion are taken away by their friends.

In the half-year 298 ophthalmic patients were examined. As usual, the majority were suffering from affections of the lids and conjunctivæ, and many cases were so advanced that little could be done for them. Only nine cataract cases were seen. The following is perhaps worthy of record:—

Chu, a boy of 14, came from Fu-chou, Kiangsi, complaining of blindness and pain in his left eye and of epileptiform attacks. He was pale and delicate-looking, and all the time held a handkerchief over his left eye, now and then mopping up the tears which would flow on the least exposure to light. There was also photophobia of the right eye, with a certain amount of injection, but vision was not impaired. He said that four months before coming he had accidentally cut his eye with a fish-bone, and all his ailments had followed on this injury. There was a scar on the lower and inner angle of the left eye, at the junction of the sclerotic and cornea—involving the latter,—about 4 millimètres in length, and the iris was bound to the posterior corneal surface at the scar. The pupil was drawn towards the scar and all but occluded, and the tension of the eyeball was – 2. At least once daily he had an epileptiform attack, one day more another day less severe in character. Enucleation was performed, and the case went on all right. The first time the bandage was taken off there was a slight seizure, which was not repeated. For nearly three weeks the boy kept the handkerchief over the stump, more from habit than necessity, it would seem, and then gave it up altogether. With the removal of the left eye, the irritability of the right disappeared, and he left at the end of six weeks quite well.

Another eye patient, suffering from acute conjunctivitis, was treating himself in a way not seen at the hospital before, though it is well known in the neighbourhood. He was wearing, under the upper lid of his right eye, the solid end of a marine univalve shell. The apex was rounded off, and the surface towards the open end was ground smooth, the whole presenting the appearance of a split pea. The smooth flat surface was towards the eyeball and the rounded surface of the extremity of the shell towards the conjunctival surface of the upper lid. It would certainly have an effect in acute conjunctivitis, though not the desired one. I am afraid that foreign patients would not tolerate that method of treatment; but the native seems not only to endure it, but to find it not unpleasant. The same shell is used in dystocia, the patient swallowing it, and labour coming to an end soon after; and it is said that one specimen is not infrequently used for both purposes. These shells are sold by Buddhist priests in this neighbourhood.

Of opium suicides, 22 were treated, and of these, 12 were seen in August and September. There were nine deaths—a large per-centage, but this is not to be wondered at when one considers that the would-be suicide has probably been under the influence of the drug for hours before being brought to the hospital and often has to be carried a long distance. It is very difficult in this part of China to learn how much opium has been taken, and when; and one very rarely learns the true motive. Desire for revenge seems, in very many instances, to be the chief reason. In one case lately the motive alleged was the curious one that the patient's tailor had made a new garment so badly that she preferred death to wearing it. The stomach pump was for her a disagreeable but efficacious necessity; and the tailor has doubtless many times since regretted his want of care.

Two cases of self-inflicted injury, and from very different yet thoroughly Chinese motives, came under observation:—

Tai, aged 24, residing near Shui-chang, as a last resource, cut a piece of flesh from his left arm, to make a revivifying soup for his aged father. The circular wound, on the outer side of his upper arm, was about 2 inches in diameter, and a piece of muscular tissue, as well as the overlying cellular structures, had been cut away. It healed readily enough. The filial piety of his boy was of no avail, for the old man swiftly passed away.

Ablation of the penis was the injury in the other case. The inflicter was in the hands of yamên runners, to be taken to Kiukiang on a charge of having committed theft near his home, a few miles from here. He was very much afraid, and getting hold of a pair of scissors, he all but completed separation. The anterior part of the organ was hanging by a tag of skin when he arrived at the hospital three days after. The hæmorrhage must have been considerable, and he used it to the utmost advantage. The runners were so much alarmed that they let him go and, fearing to be accused of his death, started at once for home.

DR. ROBERT H. COX'S REPORT ON THE HEALTH OF WUHU

For the Half-year ended 30th September 1893.

THE general health of the foreign community of this port, now about 60 persons, was below the average standard during the six months under review. This result was probably due to the exceptionally cool summer. The climate during July and August resembled that of September (our most unhealthy month) in ordinary years, and malarial fevers, as they usually do, made their appearance with the cool weather.

There were two births. One of the children died a few weeks later.

The majority of the cases treated were remittent and intermittent malarial, all of which yielded to the exhibition of quinine, with the exception of one, in which it failed, though persevered in for nearly a month. A voyage seaward, however, resulted in recovery, improvement beginning immediately on leaving the port.

Two cases of dysentery were successfully treated by milk diet and ipecacuanha.

It is much to be regretted that most of the dwelling-houses of the foreign residents are situated on low ground, only a few feet above the river at high water, when there is plenty of high ground some little distance inland, where malarial infection would not be so likely to occur and where the excessive heat of the summer would be tempered by refreshing breezes. The missionaries have shown more forethought in the selection of sites. With the exception of the house occupied by the Commissioner of Customs, the best positions are those of the various mission buildings. The members of the only mission (lately established) here who are, as yet, badly housed—and who lost two of their number from dysentery last year—very wisely decided to spend the hottest part of the year at the summer resorts of Japan and Chefoo, with a most satisfactory result as far as health was concerned. Such a procedure, however, is not open to all.

There has been no epidemic among foreigners during this period.

Among the Chinese the past summer will be long remembered as one of almost universal sickness. At Wuhu and in all the rice-growing country round malarial fevers and dysentery created great havoc among the natives. During the last three months, on all the approaches to the native town, patient after patient might be seen in the early morning being carried in to seek advice and treatment from the native medical practitioners, whose houses were crammed and the traffic in the street impeded by those seeking admission. Much rice has been left rotting in the fields, for want of reapers to gather it, and during the harvest wages in many districts were increased fourfold.

A pestilence of some sort was reported from two or three districts, each about 20 or 30 miles from Wuhu; but such information on the subject as could be obtained tended to prove that the disease was remittent fever. It certainly appears to have none of the characteristics of the bubonic plague of the South. The following is a summary of the information supplied me on the subject:—

The incubation period is unknown. The invasion is sudden, the patient having felt perfectly well the day before its onset. More males than females are affected, and of these the majority are young. The people in the country were first attacked, latterly those in towns. The symptoms given include fever; excessive sleepiness; flatulence and vomiting, the matter ejected being of a "greenish yellow" colour; constipation; intense headache; pains in the back, abdomen and limbs. There is no eruption on the skin. Emaciation is looked on as a favourable sign. A crisis appears to take place about the 10th day; those surviving that period usually recover. Cases are mentioned where as many as seven deaths have occurred in one house.

For the appended meteorological table I am indebted to Mr. Tidesurveyor and Harbour Master KINDBLAD.

METEOROLOGICAL TABLE, April to September 1893.

MONTH.	THERMOMETER.		BAROMETER.		RAINFALL.
	Maximum.	Minimum.	Maximum.	Minimum.	
	° *F.*	° *F.*	*Inches*	*Inches*	*Inches*
April	85.0	41.0	30.400	29.600	3.30
May	91.5	49.0	30.160	29.600	6.11
June	97.0	51.0	30.092	29.690	7.29
July	99.5	68.0	29.940	29.580	3.19
August	98.0	63.0	30.100	29.600	3.12
September	92.0	64.0	30.258	29.700	6.31

DR. J. H. LOWRY'S REPORT ON THE HEALTH OF WENCHOW

For the Half-year ended 30th September 1893.

THE health of foreigners was good during the past six months, though the summer has been a trying one, owing to the damp heat which prevailed. During September there was much sickness among the natives, chiefly diarrhœa and fevers.

The following cases have been under treatment:—

Burns of hands.	Incised wound of scrotum.
Diarrhœa.	Remittent fever.
Hepatic congestion.	Uric acid calculus.
Gout.	Worms.

Incised Wound of Scrotum.—In May a somewhat unusual case came under my care. A native was brought to my house in a chair, suffering from a wound in the scrotum, and he had evidently lost much blood, as his clothes were saturated. His story was that while hanging up some clothes he fell from the wall and was hurt. Subsequent inquiries changed the tale. The patient, after having drunk a fair amount of samshu, repaired to one of the brothels of the city, and there received from one of the inmates the wound he showed. After cleansing the parts thoroughly, I found a clean incised wound, measuring 1¼ inch. Five sutures were required to bring the edges together. Fortunately there was no injury to testicle or penis. Under iodoform dressings the wound healed kindly.

I append an abstract from the Customs meteorological observations taken at Wenchow (latitude, 28° 1′ 30″ N.; longitude, 120° 38′ 28½″ E.).

METEOROLOGICAL TABLE, April to September 1893.

MONTH.	BAROMETER.		THERMOMETER.		RAINFALL.	
	Maximum.	Minimum.	Maximum.	Minimum.	No. of Days on which Rain fell.	Quantity.
	Inches	*Inches*	° *F.*	° *F.*		*Inches*
April	30.340	29.650	74	50	18	3.53
May	30.200	29.740	81	60	13	3.32
June	30.054	29.730	87	60	17	8.40
July	29.940	29.568	91	74	11	6.05
August	30.036	29.670	90	75	15	6.17
September	30.140	29.394	93	75	19	11.11

DR. T. RENNIE'S REPORT ON THE HEALTH OF FOOCHOW

For the Half-year ended 30th September 1893.

THE health of foreign residents and natives during the period under notice was unusually good. In May and June, among natives, a mild epidemic of scarlet fever existed, and four cases occurred among the foreign children of one of the large missionary societies; towards the end of September several cases of influenza were observed among Europeans and natives; but in the intervening months little sickness of any sort occurred either among Europeans or natives. Neither diarrhœa, usually more or less common among Chinese during the hot months, nor anything of the nature of epidemic cholera prevailed.

Among foreign residents in the port and neighbourhood there were four births and three deaths. The causes of death were as follows:—

1. A child, aged 7 years, died (in the interior) of malarial fever and cerebral congestion.

2. An Eastern Portuguese, aged 56 years, who declined a surgical operation for scirrhus of the tongue, died of hæmorrhage, from extension of the ulceration to the internal carotid artery.

3. A European, aged 35, died of cerebral hyperæmia and cerebral meningitis, not of climatic origin.

For the following extracts from the Pagoda Anchorage Customs meteorological tables I am indebted to Mr. H. A. McINNES, the Harbour Master:—

METEOROLOGICAL TABLE, April to September 1893.

MONTH.	WIND.					BAROMETER.				THERMOMETER.					WEATHER.		
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Calm.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Maximum.	Minimum.	Mean.	Averages. Wet Bulb.	Averages. Dry Bulb.	No. of Days Rain.	Rainfall.	No. of Days Fog.
						Inches	*Inches*	*Inches*	*Inches*	° *F.*	° *F.*	° *F.*	° *F.*	° *F.*		*Inch.*	
April	18	6	2	1	3	30.42	29.83	30.39	29.81	84	41	62.5	64.17	61.19	10	4.57	6
May	21	5	1	2	2	30.24	29.80	30.21	29.73	86	56	71.0	71.71	69.75	12	4.61	4
June	11	2	14	3	...	30.11	29.75	30.16	29.82	95	64	79.5	79.59	76.59	10	2.88	2
July	10	5	13	2	1	30.03	29.62	30.02	29.65	99	73	86.0	82.02	78.45	8	9.98	...
August	16	3	12	...	...	30.10	29.73	30.12	29.80	96	76	86.0	83.06	80.45	4	1.74	...
September	25	2	2	1	...	30.15	29.55	30.15	29.62	96	72	84.0	81.01	78.77	17	12.63	...

On the whole, the summer could not be considered excessively hot, but the mean of the minima for the hot months was unusually high. Changes of temperature were slight and infrequent, and although many complained of warm, uncomfortable, sleepless nights, still to the equable condition of temperature may be attributed the healthy summer and the absence of bowel affections so frequent in seasons noted for great changes of temperature.

The rainfall was small and fitful.

Early in September we were visited by a severe wind storm, but, on the whole, there was less atmospheric disturbance than usual.

DR. ALEXANDER JAMIESON'S REPORT ON THE HEALTH OF SHANGHAI

For the Year ended 30th September 1893.

THE autumn of 1892 opened with the violent typhoon of the 8th to the 12th October, in which the *Bokhara* was wrecked and which inflicted incalculable loss on the native fishermen and junk-traders along the coast. Shanghai and the surrounding district suffered but little; indeed, if we except a slight storm on the 10th November, a furious tempest on the 23rd of the same month, and one brief disturbance on the 27th December, the closing months of the year may, from the point of view of atmospheric commotion, be described as calm and uneventful. The drought of summer and early autumn persisted through October, and was shared by the entire coast. The rainfall was one-sixth of the average, and the number of wet days was but four, against an average of 10. On two of these four days, moreover, the fall consisted of the lightest imaginable showers. The long period of dryness, which had reduced cultivators to despair, came to an end in November, when, in spite of long intervals during which no rain fell, both the number of rainy days and the amount of rain were largely in excess of the average. December, however, was again considerably below the average, the amount of rain being but one-sixth of the mean for that month during the 20 previous years. The winter was excessively severe. In October the mean temperature was 2°, and in December 4°, below the average; and although the mean for November was 2° higher than that calculated, this was due to extreme variability, inasmuch as periods of unusually low temperature were registered during the month. The first frost for the season occurred at 2 A.M. on the 26th November, and the remaining days of the month were intensely cold and perfectly dry. This marked the beginning of winter. In December there were but few days on which the mercury did not fall to 32° or below it. The maximum temperature registered in October was 80° (6th); the minimum, 42° (30th). In November the maximum was 73°.6 (9th); the minimum, 26°.6 (27th). The maximum for December was 62°.8 (30th); the minimum, 21°.7 (18th).

The year 1893 began with great severity. Snow fell heavily, and from the middle to the end of the month snow storms occurred frequently along the entire coast, extending as far south as the tropic of Cancer. Snow continued to fall throughout the first half of February. There were no great atmospheric disturbances during the first quarter of the year, the one thunder storm which visited the neighbourhood of Shanghai having passed at some distance from us, so that only its far-off echoes were heard. January and February were intensely cold, due in the former month, when the mean temperature was 5° below the average, to relatively short spells of extreme cold with snow, but in the latter, with a mean 3° less than the mean for 20 years, it was due to the low temperature of the entire month. Thus while from 7 P.M. on the 12th January to 11 A.M. on the 20th the mercury never rose to 32°, the

maximum temperature for the month was 61°.3 (on the 7th), and the minimum—which was the lowest ever registered at Zikawei—was 10°.22 (at 7 A.M. on the 19th). The maximum for February was 51° (on the 23rd), and the minimum, 22°.6 (on the 12th). Spring came in with March, for after the 5th there was no more frost. The average for the month was almost exactly that calculated from previous years, but the variations were very wide. The maximum temperature registered in March was 72° (28th); the minimum, 23° (1st). January was rainy in the intervals of freezing. The number of rainy days was 50 per cent., and the quantity of rainfall 33 per cent., higher than the average. Rain fell every day between the 6th and 13th and between the 26th and 31st. The rainfall in February was one-half, and in March three-quarters, of the average. In the latter month most of the fall was registered on two days, the 8th and 18th.

April, May and June were calm, only two short heavy blows having occurred in April and one in June. The wind hardly stirred along the coast in May. Neither temperature nor rainfall departed very widely from the average. The mean degree of heat was nearly uniform throughout April, except for one burst of exceptionally high temperature between the 21st and 26th, during which the weather would have been perfectly dry but for a short hail storm on the 22nd. The maximum temperature for April was 82° (on the 23rd); the minimum (on the 6th) was 36°.3. The rainfall was 28 per cent. below the average. In May there were no periods of wide range of temperature. The maximum, 86°, was recorded on the 23rd; the minimum, 45°.7, on the 3rd. There were five days of heavy rain, distributed at equal intervals through the month, the rainfall being thus brought to 18 per cent. above the average. Otherwise, short and light showers were of frequent occurrence. June was marked by wide variations in the degree of heat. The maximum temperature, 100°.4, was reached on the 29th; the minimum, 56°.2, was registered on the 2nd. The rainfall was 23 per cent. below the average. The beginning of summer may be dated from the last week of May.

July was tempestuous: the roll of distant thunder was heard frequently, and there were three particularly heavy blows corresponding to three typhoons which approached Shanghai on the 13th, 21st and 29th respectively. The wind was southerly throughout the month, and the temperature, although not exceeding the average, ranged very high with wide variations to points unusually low. The nights were excessively hot, and during the torrential rains of the middle of the month the weather was singularly oppressive. The maximum, 100°.4, was registered on the 8th, and the minimum, 71°.4, on the 16th. Although the number of wet days was exactly the mean of the previous 20 years, the quantity of rainfall was less than the average by nearly 25 per cent. August was calm. Storms in the distance were frequently heard, and there were two short but heavy gales on the 11th and 15th corresponding to typhoons. The temperature as to height and range closely resembled July: the nights were generally hot, and this heat was, as in the preceding month, rendered more trying by torrents of rain on the first five days, the 11th and 31st, and during the period extending from the 15th to the 25th. The quantity of rainfall was more than double the average. The maximum temperature was 98°, on the 3rd, and the minimum, 66°.6, on the 25th. Autumn may be said to have begun in the middle of September, when the north-east monsoon was established. Notwithstanding this, the latter days of the month were extremely hot. Typhoons were

frequent on the coast, but only one approached Shanghai, causing a gale on the 3rd. The mean temperature of September was unusually high, 2°.5 above the average. The maximum temperature was 92°, on the 25th, and the minimum, 62°, on the 16th. As in August, heavy rains, especially during the first nine days, intensified the effects of severe heat. The number of wet days was 16, as against an average of 11, and the quantity of rainfall was 16 per cent. greater than the mean.

The years 1892 and 1893 were marked by the absence of cholera among the foreign residents in Shanghai, and, so far as is known, by the infrequency of the disease among natives.

Small-pox was unusually prevalent and fatal among foreigners during the early months of 1893.

In one semi-confluent case in a man bearing excellent childhood marks of vaccination, and whom I had myself revaccinated successfully six months before, severe periostitis of the crests of both tibiæ occurred a few weeks after his discharge, and lasted for a little more than a month. The pain, which was extremely severe, was most intense at night. There was no reason to suspect syphilis. Superficial necrosis of bone was threatened, but was fortunately escaped. I had never before observed this sequel of small-pox, and it must, I think, be rare.

The disease made its appearance during the last three months of 1892, and caused a miniature panic among the community, the members of which presented themselves literally by hundreds for revaccination. There were several cases of varicella and of measles in November, and parotitis was of frequent occurrence from December onward. All the ordinary catarrhal affections were common, such as simple and inflammatory diarrhœa, bronchitis and pharyngitis. There were many cases of ordinary intermittent fever, mostly quotidian, though a few were of true tertian type.

I am convinced that in many instances quotidian fever is wrongly diagnosed as tertian, in consequence of neglect to observe the bodily temperature at night. It often happens that a patient who has a shiver, rise of temperature and sweat on alternate days, sleeps badly on alternate nights, is disturbed by horrible dreams and wakes drenched in perspiration or with a sensation of extreme weakness. I have notes of many such cases, where the temperature taken between 1 and 4 A.M. has been as high as 103°. Very frequently also, in apparently quotidian cases, there is a night or rather early morning paroxysm; and in such cases it generally happens that the day maximum is reached about 5.30 P.M., and the night maximum about 3.30 A.M. The recognition of the exact form of the daily curve is of great importance as a guide to the most effective administration of quinine with respect to time. Commonly, I think, the best results are obtained from two doses given about 9.30 A.M. and 7.30 P.M.

Several cases of congestion of the liver, due apparently to malaria, came under my care during the winter of 1892–93.

During the first three months of 1893 eruptive fevers increased in frequency. I have already mentioned the large mortality due to small-pox. Measles, chicken-pox and scarlatina, though by no means epidemic, were widely spread. The prevalence of catarrhal affections, already remarkable during the early winter months, continued, laryngitis and pneumonia appearing now more often.

I encountered none of the graver forms of malarial disease during the spring and early summer months. Hot weather coming on early, several cases of heat malaise presented them-

selves in May and June, and I found obstinate sleeplessness, due to some vague climatic condition, a constant cause of complaint. Certain years, of which 1893 was an example, bring, along with the appearance of the spring fruits (mangoes, mangosteens, fresh lichees and strawberries), what may almost be called epidemics of urticaria. Whether the greater frequency of this tormenting condition is due to anything special, not always present, in the fruit eaten, or to some fugitively increased liability to intoxication dependent on an unknown atmospheric condition, I cannot say. Probably to the latter, inasmuch as all the fruits mentioned, those grown in Shanghai as well as those imported from the south, appear to acquire temporary virulence.

The causation of urticaria is exceedingly capricious. In winter mollusca and crustacea sometimes are and sometimes are not almost inevitable in their effects. In spring the fruits mentioned above, and fish at all times, may induce the disease in persons not specially sensitive. The familiar varnish poisoning, more often due to inhalation of the varnish vapour than to actual contact with the varnish itself, occasionally attacks people who at other times can safely defy it. It is true that as a general rule people are either always obnoxious to the action of this poison or always completely resistant, but exceptions are now and then observed. I had once a lady under my care who was unaffected by any of the ordinary causes of urticaria, but who invariably suffered horribly whenever she ate cold mutton.

Small-pox continued to occur during the summer. There were two cases in the General Hospital in July. Remittent fever of the old-fashioned type was unusually frequent in early autumn. Heat malaise was, of course, common, and I heard of, but did not see, cases of sunstroke.

Unsuspected cardiac weakness often betrays itself under the stress of great atmospheric heat, especially when accompanied by saturation of the air with moisture. The large amount of alcohol consumed in the form of more or less diluted cooling drinks contributes largely to this result; while the often unreasonable quantity of liquid swallowed, irrespective of its nature, induces distaste for food, and, especially when poured into the stomach immediately before, during, or immediately after meals, is an obvious cause of dyspepsia, the stomach juices being so weakened by flooding that they are incapable of exerting their natural and necessary solvent action on food.

Several cases of whooping-cough were noted among children, but they were not sufficiently numerous to constitute an epidemic. True dysentery, requiring specific treatment, became common, and diarrhœa, always prevalent during the hot months, and caused or aggravated by personal imprudence in diet or by exposure to the chances of sudden chills, helped to swell the sick lists. There was, however, but one fatal case. In several instances dysenteric symptoms supervened on what at the beginning was simple catarrhal diarrhœa; but rest in bed, with careful attention to diet and the minimum of medicinal treatment, generally sufficed to allay them.

I believe that a great deal of confusion would be avoided if the term "dysentery" were applied to these cases of inflammatory diarrhœa with tormina, tenesmus and expulsion of blood and mucus, but in which the general reaction is not marked; and that of "specific ulcerative colitis" to true tropical dysentery which requires specific treatment with ipecacuanha.

The following death returns are noteworthy chiefly on account of the large mortality from small-pox and from diseases of the nervous system, and the absence of both cholera and dysentery as causes of death.

DEATHS among FOREIGNERS from 1st October 1892 to 30th September 1893.

CAUSE OF DEATH.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	TOTAL.
Small-pox	...	...	2 1*	2 2* 1†	1 2*	1 1*	1*	...	...	...	...	...	14
Scarlet fever	...	...	...	...	1*	...	1†	...	...	...	...	...	2
Measles	...	...	...	...	...	1†	...	...	...	...	...	...	1
Enteric fever	1*	1	...	...	...	...	1*	1	...	...	...	1*	5
Remittent fever	...	...	...	...	...	...	...	...	...	...	...	1†	1
Diphtheria	...	...	...	...	...	...	1†	...	...	...	...	...	1
Tuberculosis	1	...	...	...	...	...	...	...	...	...	...	...	1
Phthisis	1 1*	...	...	...	...	...	1	1	...	1	1*	...	6
Bright's disease	1*	1	...	...	...	...	...	...	...	...	...	...	2
Alcoholism	...	...	1	...	...	...	...	...	...	...	...	...	1
Asthenia	...	...	...	...	1†	...	...	...	...	...	...	...	1
Atrophy	...	...	...	...	...	...	...	...	...	...	...	1†	1
Anæmia	...	...	...	1*	...	...	...	...	...	...	...	...	1
Old age	...	...	...	...	...	...	...	...	...	...	...	1	1
Meningitis	...	...	...	...	...	...	1	1†	...	...	...	...	2
Hydrocephalus	...	...	...	...	...	...	...	...	1†	...	...	...	1
Hemiplegia	...	...	...	...	1	...	...	...	...	...	...	...	1
Apoplexy	...	...	...	1*	2	1	1	...	1	...	1	...	7
Cerebral abscess	...	...	...	...	...	...	...	...	...	1*	...	...	1
Cerebral embolism	...	...	...	...	...	...	1	...	...	...	...	...	1
Insolation	...	...	...	...	...	...	...	...	...	...	1*	1	2
Encephalitis	...	...	...	1†	...	...	...	...	...	...	...	...	1
Epilepsy	...	...	1*	...	...	...	...	...	...	...	...	...	1
Convulsions	...	...	...	...	...	1†	...	1†	...	...	...	...	2
Acute mania	1*	...	...	...	...	...	...	...	...	...	...	...	1
Beri-beri	...	...	...	...	...	...	...	...	...	1*	...	...	1
Heart disease	1*	...	...	...	1	...	...	...	...	1	...	...	3
Bronchitis	...	...	2	2	...	...	1†	...	...	...	...	...	5
Pneumonia	...	...	...	1†	...	1	...	...	1*	...	...	...	3
Atelectasis	1†	...	...	...	...	...	...	...	...	...	...	...	1
Peritonitis	...	...	1	1	...	...	...	...	...	...	...	...	2
Acute colitis	...	...	...	...	...	...	...	...	...	...	...	1†	1
Diarrhœa	...	1	...	...	...	...	...	1†	...	1	...	...	3
Hepatitis	...	...	...	...	...	1	...	...	...	...	...	...	1
Cirrhosis of liver	...	...	1	...	...	...	1*	...	...	...	...	...	2
Cancer	...	...	...	1	...	...	1	...	...	...	...	...	2
Disease of bone	...	1*	1 1*	...	...	...	...	...	...	...	...	...	3
Tumour	...	2	...	...	...	...	...	...	...	...	...	...	2
Injury and accident	...	1*	...	...	...	...	...	...	...	...	1*	...	2
Drowning	...	...	...	...	...	...	1 1*	2*	...	...	1*	1*	6
Uncertified	1	...	...	...	...	1	1*	1*	...	...	...	...	4
TOTAL	9	7	11	13	9	8	14	8	3	5	5	7	99

* Non-residents (35). † Children (17).

614.0951

CHINA.

IMPERIAL MARITIME CUSTOMS.

II.—SPECIAL SERIES: No. 2.

MEDICAL REPORTS,

FOR THE YEAR ENDED 30TH SEPTEMBER 1894.

47th and 48th Issues.

PUBLISHED BY ORDER OF

The Inspector General of Customs.

Oct. 30, 95

SHANGHAI:
PUBLISHED AT THE STATISTICAL DEPARTMENT OF THE INSPECTORATE GENERAL OF CUSTOMS,
AND SOLD BY
KELLY & WALSH, LIMITED: SHANGHAI, HONGKONG, YOKOHAMA, AND SINGAPORE.
LONDON: P. S. KING & SON, 12 AND 14, KING STREET, WESTMINSTER, S.W.
1895.

[*Price* $1.]

CHINA.

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51774

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INSPECTOR GENERAL'S CIRCULAR No. 19 OF 1870.

INSPECTORATE GENERAL OF CUSTOMS,

PEKING, 31*st December* 1870.

SIR,

1.—IT has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to
- Season.
- Alteration in local conditions—such as drainage, etc.
- Alteration in climatic conditions.

e.—Peculiar diseases; especially leprosy.

f.—Epidemics
- Absence or presence.
- Causes.
- Course and treatment.
- Fatality.

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking.

* * * * *

3.—Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr. ....., and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 30th September—that is, for the Winter and Summer seasons.

4.— * * * * *

I am, etc.,

(Signed) ROBERT HART,
I. G.

THE COMMISSIONERS OF CUSTOMS,—*Newchwang*, *Ningpo*, *Tientsin*, *Foochow*, *Chefoo*, *Tamsui*, *Hankow*, *Tainan*, *Kiukiang*, *Amoy*, *Chinkiang*, *Swatow*, and *Shanghai*, *Canton*.

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Dr. C. C. DE BURGH DALY'S REPORT ON THE HEALTH OF NEWCHWANG

For the Ten Months ended 31st March 1894.

In the beginning of June 1893 I took over charge of this practice.

During the period under review the health of the foreigners has been good.

There were two births and one death. The fatal case was one of typhoid fever: the patient, an officer on board a steamer, arrived here on the 14th day of the illness; he was dressed and on deck. His temperature was 104°, and hæmorrhage from the bowel had already commenced.

The only other serious cases were one of phthisis and one of rheumatic gout.

Two of the residents suffered from tapeworm, and nearly all the children and some of the adults from round worm; one child passed from the bowel or vomited over 100 in 12 months.

Both the water and meat supply are a danger to the community. There is absolutely no foreign or native supervision over the meat furnished to residents and the shipping.

The drinking water provided for most of the residents is brought from a well some distance from the Settlement. That supplied to the shipping is, in many cases, taken from the river some miles above the Settlement; in others, as I have myself often seen, from the surface of the river opposite the native city. The water-boats are tied up among scores of native cargo-boats, above and below them, and whilst the surface water is scooped up in water baskets the crews of the cargo-boats are emptying their bowels and bladders. And yet Newchwang water is supposed to be fairly good, and is often drunk on board the steamers without being boiled and filtered.

The water used by residents for bath purposes and for ordinary use in the pantry and kitchen is not much better. This is taken from ponds in the Settlement, which ponds are to a great extent filled with the drainings from the surrounding fields and roads, necessarily soaked with animal and vegetable filth.

The foreign houses are built on a mudflat. The houses and compounds are in most cases raised above the level of the surrounding ground, which by a shower of rain is quickly converted into a swamp. There are only mud paths between most of the foreign residences, one of which is the school the children attend. These paths in wet weather can be more easily imagined than described.

If, as funds permitted it, the roads were improved, the swamps filled in, and the meat and water supply supervised and improved, this port would be not only more enjoyable but more healthy to live in.

By the kindness of Mr. Harbour Master ARMOUR I am enabled to append the result of meteorological observations for the last nine months.

METEOROLOGICAL TABLE, July 1893 to March 1894.

MONTH.	ANEROID BAROMETER.		NO. OF DAYS ON WHICH THE TEMPERATURE FELL BELOW						NO. OF DAYS ON WHICH THE TEMPERATURE ROSE ABOVE						No. of Days on which Rain fell.	Total Amount of Rainfall.	No. of Days on which Snow fell.	No. of Days on which there were Dust Storms.	No. of Days on which High Winds blew.
	Highest.	Lowest.	°F. -15	°F. -10	°F. 0	°F. 10	°F. 20	°F. 32	°F. 50	°F. 60	°F. 70	°F. 80	°F. 85	°F. 90					
1893.	*Inches*	*Inches*														*Inches*			
July	30.30	29.89	...	...	...	...	...	...	...	...	7	15	9	...	8	6.44	...	1	2
August	30.30	29.62	...	...	...	...	...	...	...	...	17	4	10	...	5	1.52	...	2	4
September	30.55	29.97	...	...	...	...	...	...	2	13	15	...	...	...	6	3.03	...	1	2
October	30.83	30.10	...	...	...	...	...	9	11	8	1	...	...	...	6	1.50	...	1	9
November	30.87	30.00	...	...	...	...	20	9	1	...	...	...	...	...	3	0.53	1	...	3
December	30.87	30.00	...	...	4	13	6	8	...	...	...	...	...	...	...	...	5	...	4
1894.																			
January	31.00	30.40	4	5	10	12	...	...	...	...	...	...	...	...	...	...	1	...	1
February	30.97	30.23	...	...	2	10	15	1	...	...	...	...	...	...	...	...	2	5	3
March	30.90	30.15	...	...	...	...	...	9	11	2	...	...	...	...	2	0.53	3	3	3

DR. JAMES H. McCARTNEY'S REPORT ON THE HEALTH OF CHUNGKING

For the Half-year ended 31st March 1894.

DURING the six months under review there has been no serious illness among the foreigners at this port. This no doubt can be accounted for (in part at least) by the remarkably cool summer and the absence in the mountains of many members of the community during the greatest heat in August. With the exception of two or three cases of chronic malaria and one case of measles, there has been entire freedom from illness among both the Customs staff and the missionary body. Taking into consideration that there are between 40 and 50 foreign residents in the city, this is not a bad showing for Chungking as compared with the other river ports. Chungking has always received the name from residents and those who have been residents as being very unhealthy. A large part of this criticism in the past has been unjust. Time will prove that with ordinary precautions in warm weather this port will become one of the healthiest on the river for foreigners. One resident has lived in Chungking for 30 years, while two others have been here off and on for a period of 12 years. If these people are to be taken as examples of Chungking's unhealthiness, we cannot decide that this port is more unhealthy than others on the river. Those who suffer most from malaria and other troubles are those who have only been here for a period varying from one to three years. The climate is warm and oppressive during the summer months, the oppressiveness being due to the dampness of the atmosphere. The winter months are quite foggy, the sun seldom being seen. As the thermometer never reaches freezing point in the winter, and as this is the time when the streets are the dirtiest, the absence of the sun, which retards the formation of malaria, can be regarded as a blessing in disguise. The high elevation of Chungking gives us perfect drainage, while swiftly flowing streams on three sides furnish excellent drinking water. It has been claimed that the rock on which the town is situated favours decomposition, and is therefore the source of the malaria with which we are troubled. I do not agree with this view. PARKES, in his *Hygiene*, says that when these rocks have been weathered and disintegrated they are supposed to be unhealthy. Such soil is absorbent of water; and the disintegrated rock of Hongkong is said to be rapidly permeated by a fungus, but evidence as to the disintegrated trap is really wanting. He further states that sites on these formations are usually healthy; the slope is great and the water runs off rapidly. However, I am rather inclined to take the view that our malaria is caused by the decomposition of the organic matter, which is piled up on the streets during the winter months, waiting for the spring rains to wash it away.

There was no return of the cholera which caused such destruction of life in 1892. No extra precautions were taken by the authorities, but still it did not recur, probably owing in

some measure to a mild summer and in a greater degree to the open and perfect system of drainage and good drinking water.

The only case of contagious disease among foreigners was one of measles, in an adult.

Among the natives small-pox has not been so prevalent as in the preceding six months, although there have been many cases. Measles is constantly with the Chinese here, much more so than small-pox, and on account of the scrofulous character of the larger per-centage of the children, it frequently leaves them with ulceration of the cornea. Chicken-pox is common, but not to such an extent as measles. The disease most frequently met with, and proving most fatal under the native treatment, is a form of intermittent fever, very pernicious in its character; the local name is *han-ping*. It prevails in the spring and summer months, and occurs periodically at the time of greatest heat. The natives regard it as the most fatal of all diseases, which, under this treatment, it has proved to be. It yields readily to full doses of quinine and tonic treatment.

During the half-year I encountered two cases of diphtheria, both in adults.

There were four cases of leprosy in the hospital, their stay varying from one week to two months. These were the only cases seen. Two were of the anæsthetic and two of the tubercular variety; all were treated with daily applications of gurjun oil in emulsion, alternated with applications of tincture of iodine. Internal treatment consisted of full doses of sulphate of quinine three times a day and iodide of potassium alternated with liquor strychniæ and vegetable tonics.

One patient left in less than a week because the others made it too unpleasant for him when they found out that he had leprosy. One of the remaining three stayed about three weeks; at the end of that time he showed marked improvement, but would not remain any longer. The other two cases are still in hospital; both patients are on a fair way to recovery.

The Chinese look upon leprosy as highly contagious, and will not allow a leper to mingle with them. The disease is endemic in certain localities farther west of Chungking, but extremely rare in this district.

The hospital has furnished abundance of surgical material, and as it gets better known will add largely to the interest in the work.

During the period under review there have been no deaths and but three births in the foreign community. I attended 10 or 12 native labour cases, all of which were instrumental. In one I found that the placenta had been retained for four days. Patient made a good recovery as far as I knew. Of these cases three mothers and three children died: one was a case of eclampsia, and one of osteomalacia, in which the outlet was so narrow that it was impossible to do craniotomy.

Notes of a few surgical cases are given below:—

CASE 1.—Male, single; has been a strict vegetarian for 24 years; at present about 30 years of age. The enlargement of the glands of the neck and axilla seen in the accompanying lithograph was of several years' duration, without pain, and the only inconvenience from which he suffered has been from the motion

of the jaw in eating and talking. When seen he was extremely anæmic, and had a shrill, squeaky voice. The glands were all removed in two operations, each taking about 45 minutes. The patient made a slow recovery, and was discharged well in about one month.

CASE 2.—The accompanying reproduction from a photograph shows a countryman, married, about 30 years of age. The growth began when he was a child, gradually enlarging until it reached the present size. It gave him little pain, but interfered with his eating and talking. It looked like a large warty growth, emitted a peculiar odour, and was pedunculated in its attachment. After its removal it was found to be of a soft fibroid variety, sponge-like in structure, with the meshes filled with a sebaceous material emitting a foul smell. The patient made a good recovery, and was much improved in appearance.

The following are notes of cases of excisions of hip-joints:—

I.—Boy, 16 years of age, scrofulous, with hip-joint disease of several years' standing; the joint has been discharging pus for two or three years. The patient was very anæmic, and it was decided that the only chance of saving his life was by an excision of the joint. I excised the femur below the lesser trochanter and cleaned out the acetabulum. The limb was packed in a fracture box and extension applied. The patient made a slow recovery on account of his condition. In three months he was discharged from the hospital cured, with about 3 inches shortening. He can stand on the leg, but cannot walk without the aid of a crutch.

II.—Dislocation of hip of long standing; attempts at reduction failed each time. Excised head of bone. Patient made a good recovery, with about 2 inches shortening. When discharged he could stand on his leg, and in three months after he could walk without the aid of a crutch.

III.—An adult, merchant; hip-joint disease of long standing, leg considerably shorter than its fellow. Patient greatly emaciated from the large amount of discharge. Excised the bone below the lesser trochanter. The wound would not heal on account of patient removing the weight, which allowed the glutæus to pull the bone through the wound. Operated second time, removing another small piece of bone. When he left patient could walk with the aid of crutches and was much improved in appearance.

IV.—Boy; had fallen out of a tree when a small child and injured his back. On account of the pain he lay with his leg flexed on his abdomen until it had become ankylosed. In this case removed only the head. The patient was discharged in about a month well. He had perfect use of his joint, and the last report from him said that his leg was in good condition.

For the following meteorological table I am indebted to Mr. W. N. LOVATT, of the Chungking Customs:—

METEOROLOGICAL TABLE, October 1893 to March 1894.

MONTH.	THERMOMETER.		BAROMETER.		RAINFALL.
	Highest.	Lowest.	Highest.	Lowest.	
1893.	° *F.*	° *F.*	*Inches*	*Inches*	*Inches*
October	81	60	29.38	29.12	2.63
November	69	43	29.46	29.20	2.29
December	64	40	29.44	29.26	0.62
1894.					
January	68	40	29.36	28.98	0.83
February	69	40	29.38	29.04	0.36
March	92	50	29.34	28.95	1.76

Dr. E. A. ALDRIDGE'S REPORT ON THE HEALTH OF ICHANG

For the Half-year ended 31st March 1894.

The following abstract is from the meteorological observations taken at the Custom House, Ichang (latitude, 30° 14′ 25″ N.; longitude, 111° 18′ 34″ E.):—

Meteorological Table, October 1893 to March 1894.

Month.	Thermometer.				Barometer.		Rainfall.	
	Highest.	Lowest.	Average Highest.	Average Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
1893.	° F.	° F.	° F.	° F.	Inches	Inches		Inches
October	87.0	49.5	76.8	58.7	30.30	29.87	4	0.50
November	76.5	37.0	65.4	48.0	30.45	29.95	7	1.46
December	76.5	29.0	58.1	37.7	30.62	29.86	1	0.02
1894.								
January	60.0	31.0	48.7	36.6	30.56	29.85	6	0.84
February	76.0	29.0	55.6	38.1	30.50	29.80	7	2.19
March	87.0	33.0	63.3	44.7	30.70	29.72	8	3.57

On analysing the above record it is found that the average temperature has been about 54° F. The winter was unusually mild and pleasant. The rainfall for the six months under review was below the average, being only 8.58 inches, falling in 245 hours, making a total for the last 12 months of 45.74 inches, which fell in 581 hours.

The health of foreigners has been good, and there is nothing of medical interest worthy of report. The most serious case was one of dysentery, which, however, yielded to treatment.

During 12 months six cases of childbirth were attended, one of European parentage and five half-castes.

The doctor who had charge of the Church of Scotland City Dispensary having died last autumn, I have tried somewhat to carry on the work for the last six months, which, judging by the attendance, is a boon appreciated by the poorer natives.

DR. ROBERT H. COX'S REPORT ON THE HEALTH OF WUHU

For the Half-year ended 31st March 1894.

THE general health of the foreign community (now consisting of 64 persons) for the period under review has been below the average since my arrival six years ago. Malarial fevers, as usual, composed the majority of cases treated; and of these nearly all occurred in the autumn and early winter. This may be accounted for by the prolonged drought, only 3 inches of rain having fallen during the last three months of the year, causing the exposure of large tracts of marshy ground and paddy fields which in ordinary years are covered with water.

Two cases of pneumonia were treated. In one recovery was complete, but in the other fresh lung trouble was set up by a premature departure from the sick room, which resulted in bronchitis with asthmatic attacks, and has assumed a more or less chronic form.

A case of dysentery also occurred, and was treated by ipecacuanha and milk diet.

Two cases of "washerman's itch" of the scrotum, which came under observation, were successfully treated as follows:—

An ointment composed of boracic acid, acetate of morphia and lanolin was applied for two or three days, after which the patients were directed to wear drawers—the shape used for bathing—made of fine shirting, which, after being washed and before being worn, were to be dipped in a saturated solution of boracic acid in water and dried. This offers a free supply of the acid, in the form of powder or minute crystals, to the part, and may be used by those liable to the disease as a preventive measure in hot weather.

There were no epidemics, no births and no deaths.

Among the Chinese the sickness mentioned in my last Report continued till well into November, and in some cases did not appear to be restricted to the low-lying ground. I regret that no typical case came under my observation.

The following surgical cases may be worthy of detail:—

Amputation of the Thumb at the Carpo-metacarpal Joint.—A Chinese sailor on board a gun-boat, while working at a winch, had his sleeve caught by the cog-wheels, which also pulled in his right hand. When I saw him the thumb was almost completely severed at the head of the metacarpal bone, its only attachments being the adductor and extensor tendons, both of which had been pulled out a considerable distance, probably by the efforts of the patient to free himself. Under chloroform the thumb and metacarpal bone were removed by the oval operation, the flaps brought together with silk sutures and the wound dressed with iodoform. He was then sent on board the gun-boat and I have not heard from him since. The thumb of the other hand was double.

Plastic Operation for Restoration of Upper Lip.—A Chinese cook on board a rice steamer had been struck with a rice-bowl on the face, which cut the whole upper lip almost completely away, as with a sharp knife, and broke off at their necks his four upper incisor teeth. The lip was hanging by its left corner—a pedicle about ¼ inch in diameter—and the teeth were loose in the mouth, being only slightly attached to the lacerated gums. The teeth were removed by a few snips of a pair of scissors, and the cut surfaces of the lip washed in warm carbolic lotion and seven horsehair sutures inserted—three in the mucous membrane and four in the skin,—and a dressing of carbolic oil applied. The wound healed by first intention, and the resulting disfigurement, as far as the lip was concerned, was imperceptible at a short distance.

The following obstetric case may be of interest:—

Craniotomy for delayed Labour.—A multipara, aged 49, who had no living children for 15 years but one premature labour seven years ago, had been in labour four days previous to my being sent for. The liquor amnii had come away on the morning of the 2nd day, and in the evening all expulsive pains had ceased. During the 3rd day fœtal movements were said to have occurred, but were altogether absent on the 4th. On my arrival in the evening I found the patient with flushed face, temperature 99°.8 and pulse 100. The position of the fœtus was easily made out, as both the uterus and abdominal walls were flaccid, and a left occipito-posterior diagnosed. Neither fœtal movement nor heart-sounds could be detected. *Per vaginam*, the head was felt fairly well down in the pelvis; the caput succedaneum was boggy and crepitated on pressure. After the urine had been drawn off and the patient placed in the dorsal position, an attempt to deliver with Barnes's forceps proved unsuccessful. Craniotomy was therefore resorted to. A crucial incision was made in the presenting cranial walls with Denman's perforator, and the blades passed through, breaking up the brain substance. The head was then gradually delivered with Simpson's craniotomy forceps, aided by an occasional uterine contraction. The funis was found tightly wound round the neck of the fœtus—a female of full size,—and was ligatured and divided before the birth of the shoulders, which, though tardy, was accomplished by uterine efforts alone, excited by rubbing the uterus through the abdominal walls. No anæsthetic was used, but liquid extract of ergot with whisky was frequently given during the operation. There was good contraction of the uterus and no postpartum hæmorrhage. The vagina was irrigated with a solution of permanganate of potash, and a binder applied. A week later I found the patient up and engaged in household duties.

It is interesting to record that in the above case and in other labour cases attended I have noticed brown sugar among the drugs used by patients in this condition, while in the *Lancet* of 10th March 1894 the following appears:—

According to Professor Mosso and Dr. Paoletti, of Genoa, the best and simplest method of exciting uterine action in confinements is by giving sugar. In 10 out of 11 cases in which they tried it an ounce of sugar dissolved in half a tumbler of water produced a decided effect in from half to three-quarters of an hour. Sometimes a second dose was required in order to terminate the labour. The contractions were always of a regular, never of a tetanic, character.

The Chinese, however, appear to use it more after the birth of the child, probably with the object of preventing hæmorrhage.

I append an abstract from the Customs meteorological observations, prepared by the Harbour Master, Mr. A. W. Kindblad.

Meteorological Table, October 1893 to March 1894.

Month.	Thermometer.		Barometer.		Rainfall.
	Maximum.	Minimum.	Maximum.	Minimum.	
1893.	° F.	° F.	Inches	Inches	Inches
October	82.0	47.0	30.458	29.980	2.83
November	75.0	34.0	30.568	30.080	0.21
December	70.0	26.0	30.680	29.980	...
1894.					
January	63.0	24.0	30.625	29.925	1.19
February	74.0	29.0	30.651	30.090	0.22
March	78.5	31.0	30.574	29.800	5.14

DR. JOHN FRANCIS MOLYNEUX'S REPORT ON THE HEALTH OF NINGPO

For the Half-year ended 31st March 1894.

THE unusually dry weather which prevailed until late in December last had its disadvantages. There was a want of rain for flushing the water channels, and the phenomenally low state of the canals naturally brought about a condition of extreme stagnation, with accumulation of decayed vegetable and other deleterious matter. In the country districts the natives had grave apprehensions as regards crops, and their supply of water for drinking and other domestic purposes was curtailed and of a very insanitary character. This condition of affairs was the cause of much sickness in the rural districts during the months of November and December, and the hospitals in the city had many cases from the surrounding country.

Among foreigners the general health has only been moderately good, taking into consideration the fact that the period under notice does not include the unhealthy season.

There has been one death; and I am informed by the doctor who was in attendance that the case was a male child, 3 years of age. The cause of death was small-pox, and the child had never been vaccinated.

There was one birth.

SMALL-POX.

The city, surrounding villages and foreign Settlement experienced a severe epidemic. It is stated by natives and old foreign residents that there has been no epidemic so severe for the past 25 years. It is impossible to estimate the number of deaths among natives, but undoubtedly thousands have died. The mortality among children was very great. Adults, however, also died in large numbers. The fresh cases are now less numerous, but there is plenty of small-pox still in villages near the city.

Among foreigners, so far we have had five cases. In addition to the fatal case already alluded to (unvaccinated), there was a second case in the same family, of modified small-pox now convalescent. The latter child was vaccinated seven days before the appearance of the rash.

An officer was landed from a Norwegian steamer. The patient had a very mild attack, acquired in Kobe. By the courtesy of the Sisters of Charity I was able to convey the patient direct from the ship to their hospital, where he remained under treatment. The man had been vaccinated in infancy, and was re-vaccinated by me immediately upon arrival and discovery of the disease.

The female child of a Clerk in the Customs was removed on the 16th January to the Sisters' hospital. She had a mild attack of modified small-pox. The child had been vaccinated; age 12 years.

The infant daughter of another member of the Customs staff showed a small-pox eruption on the 13th March, and has since passed through a mild attack of modified small-pox. The child is now convalescent. She had been properly vaccinated less than two years ago.

Several of the Chinese members of the Customs staff have been prevented from attendance at the office owing to cases of small-pox existing in their families. Periodically such families

have been visited and attendance at the office, or otherwise, supervised. Prophylaction, by fumigation, etc., has, where practicable, obtained.

The number of foreigners in the Settlement itself is little over 60; so it will at once be noticeable that the per-centage attacked was uncomfortably high.

Vaccination.

It is satisfactory to record the readiness with which the foreign residents accepted re-vaccination, where desirable.

Many native children have been brought to me for vaccination, and last week 25 from surrounding villages were vaccinated at one sitting. Practically all the Chinese children in the mission schools have been vaccinated.

It seems to me very important that every native child operated upon should, without fail, be seen later on, so that vaccination itself should not be discredited by the Chinese, through children unsuccessfully vaccinated subsequently dying of small-pox.

Measles.

Commencing about the middle of November, we had a severe epidemic of measles, and many fatal cases were reported by itinerant missionaries from the surrounding country. At one time I had over 40 cases down in one institution. I am unable to record anything unusual as to the character of the epidemic, excepting that the mortality appears to have been very high among the native children; but as it ran on through mid-winter, doubtless sequelæ in lung and laryngeal troubles account for the high mortality.

Remittent Fever.

I have not seen many serious cases; but my time here, so far, does not include the usual fever months. Judging from the appearance of foreign residents of long standing, one would imagine that so-called "Ningpo fever" cannot resemble in severity the type one meets in Southern China.

Typhoid Fever.

After inspecting Ningpo and its surroundings, I expected to find typhoid a constant quantity. The water in common consumption, the arrangements as to night-soil and surface manuring, the fact that wells exist alongside corpses recently placed in open places, and the general unwholesomeness of local habits, all suggested this place as a typhoid stronghold. So far, I have not seen one case of typical typhoid fever; more than that, I have not seen a case which one could describe as closely resembling it. Unhappily, the views of the natives render sectio cadaveris undesirable, if not impossible; and as no case attended by me presented sufficient evidence to associate it with this malady, I am forced to conclude that, during the months under consideration, typhoid fever in Ningpo is not so frequent a trouble as in many places where sanitary science is not only understood in high places but has a practical outcome in legislative enactments.

Malarial fever of a low remittent type—in which the temperature is always above normal, and any reading over 102° unusual—is commonly called "typhoid" by the general public. Such fever is very persistent, running on at times for as long as two months. I have noticed, as sequelæ, three cases of enlargement of the parotid glands, and two cases where, after apparent convalescence, suppurative phlebitis has been followed by sloughing and gangrene of the tendo Achillis and other tendons. I do not believe that there is any intestinal typhoid lesion in this fever, and regard the term in common use, "typho-malarial fever," as misleading, and calculated to shelve exact diagnosis.

Erysipelas.

One very severe case occurred. It should, perhaps, be regarded rather as a surgical than an idiopathic case.

The patient (a member of the Customs staff) had suffered from otorrhœa and had had a small aural polypus. A week after his return to duty he had a rigor, and subsequently developed erysipelas of an alarming type. The temperature in a few hours rose to 104°.8; and from the 26th January to the end of second week of February the fever persisted, and the condition of the patient was at times alarming. The peculiarity of the case consisted in the persistence of high temperature for over 14 days, in spite of large doses of quinine, brandy, phenacetin and ultimately cold sponging. Incisions in scalp, etc., very slightly affected temperature. As so commonly happens, the cervical glands gave the first indications of the trouble. The well-known treatment by large doses of tincture of perchloride of iron and regular and large doses of brandy (always with the nourishment) was pursued throughout; quinine was also exhibited in large doses. The mean temperature for the first 14 days (the highest and lowest in each 24 hours being taken) was 102°.1 for 28 registrations.

Surgical Memoranda.

Undoubtedly the Chinese in this district support surgical interference very well. They are, as soon as their confidence is secured, highly satisfactory subjects. In my opinion they are less prone to inflammatory action than foreigners, and they are unquestionably more patient and endure pain with at least equal courage. The rapidity of healing processes with the natives surprises me. It appears to me that bone development after fracture is very rapid by comparison.

My most interesting surgical cases have been:—

A compound comminuted fracture of the thigh (junction of the lower and middle third), the result of a bullet wound. The man was admitted to hospital 14 days after injury. The aperture of entrance was enlarged and a counter-opening made, and upwards of 20 ounces of purulent pus evacuated. After consultation I decided not to amputate, though the chances were against saving the limb. The man now has union, with shortening of 1¼ inch. There is still some necrosed bone to come away.

A suicidal laceration of the larynx and œsophagus reached me several days after infliction of injury. There was much sloughing of the parts of the œsophagus available for stitching—the thyrohyoid membrane was completely divided. After the introduction of a soft œsophageal tube, the œsophagus was cocainised and stitched up. Feeding was, of course, by œsophageal tube and by rectum. The man had pneumonia on admission, but lived five days, when he succumbed to exhaustion and the lung trouble. He had also scraped off the occipito-frontalis in part, and the frontal bone was deeply grooved by some rough instrument. There was also a punctured wound in the abdominal wall.

For very extensive disease of the tarsus and lower end of the tibia, Syme's amputation was performed on a case of long standing. The patient made a good recovery, assisted by iron, cod-liver oil and maltine.

A leg was amputated in a case of compound fracture of the tibia below the middle of the bone. This injury was associated with a 20-year old ulceration extending from the seat of fracture to the dorsum of the foot. I had to amputate by lateral flaps, as there was not sufficient material for a long anterior flap. The man had been a cripple for years, and has made a good recovery.

There is a tremendous ophthalmological field, but it is difficult to get people, especially from the rural districts, to stay sufficiently long under surveillance; there is grave danger in operating and then losing the run of your eye cases.

We badly want a hospital, or at least a number of beds, for gynæcological cases. If we had something of this kind, with an experienced foreign nurse who could speak the local dialect well, much good work could be done. At present it is pitiable to have to let case after case go unassisted. It is hopeless to attempt any treatment of Chinese women's troubles at their own homes in or around Ningpo.

It is gratifying to report that on the 10th April the Sisters of Charity Hospital of St. Joseph, in the Settlement, opens a new wing, with accommodation for 34 fresh beds and with a room for operations attached.

For the following meteorological table I am indebted to Captain RAE, Harbour Master:—

METEOROLOGICAL TABLE, October 1893 to March 1894.

Month.	Wind.					Barometer.				Thermometer.					Weather.		
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Calm.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Maximum.	Minimum.	Mean.	Averages. Wet Bulb.	Averages. Dry Bulb.	No. of Days Rain.	Rainfall.	No. of Days Fog.
1893.	D. h.	D. h.	D. h.	D. h.	D. h.	Inch.	Inch.	Inch.	Inch.	°	°	°	°	°	D. h.	Inch.	D. h.
October.....	10 0	1 0	0 12	15 0	4 12	30.52	30.04	30.47	30.00	87	42	66.0	80	83	3 13	6.62	1 0
November.....	3 0	5 12	2 12	15 0	4 0	30.55	30.15	30.54	30.10	76	33	33.9	71	74	0 1	0.08	1 18
December.....	6 0	4 0	1 12	14 6	5 6	30.60	30.09	30.60	30.07	69	25	30.0	65	67	0 21	0.38	1 6
1894.																	
January.....	10 12	3 0	1 12	12 12	3 12	30.57	30.00	30.48	30.20	65	26	29.3	58	64	5 0	4.22	1 6
February.....	8 6	5 0	0 12	10 6	4 0	30.63	30.10	30.63	30.13	70	25	33.0	63	68	2 22	1.01	0 12
March	6 12	5 12	2 12	9 6	7 6	30.63	29.94	30.50	29.98	84	30	36.7	70	72	8 11	4.26	2 0

DR. J. H. LOWRY'S REPORT ON THE HEALTH OF WENCHOW

For the Half-year ended 31st March 1894.

THE general health of the foreign community in this port and district, now numbering 29, has been very good during the past six months. The winter was very mild compared with that of last year, the only cold weather experienced being towards the end of December and first part of January. From October to early in February a very serious drought lasted, and caused much misery among the natives. Enteric fever was said to be rife—a statement hardly to be doubted, seeing that the poorer classes were in desperation for water and took it from where they could get it, even when it was little better than cesspool water.

Owing to the prevalence of small-pox in Shanghai, I vaccinated a number of adults and children. Late in January Dr. ALFRED HOGG, of Aberdeen, arrived here to establish a hospital and dispensary in connexion with the United Methodist Free Church Mission; his services will be greatly appreciated by the native community, and there is a large field for surgical work.

I give a list of the more serious cases that came under my treatment:—

Amenorrhœa.	Influenza.
Blood-poisoning.	Remittent fever.
Bronchitis.	Sprain of shoulder, result of heavy fall.
Diarrhœa.	Tonsillitis, acute, with abscess.

Appended is an abstract from the Customs meteorological observations taken at this port (latitude, 28° 1′ 30″ N.; longitude, 120° 38′ 28½″ E.).

METEOROLOGICAL TABLE, October 1893 to March 1894.

MONTH.	Highest Reading of Barometer.	THERMOMETER.		RAINFALL.	
		Highest by Day.	Highest by Night.	No. of Days on which Rain fell.	Quantity.
1893.	*Inches*	° *F.*	° *F.*		*Inches*
October	30.400	75	58	9	4.60
November	30.430	65	48	...	...
December	30.490	66	37	3	0.28
1894.					
January	30.400	57	35	13	3.09
February	30.500	64	38	9	1.20
March	30.500	68	42	17	6.62

DR. ALEXANDER RENNIE'S REPORT ON THE HEALTH OF CANTON

For the Year ended 31st March 1894.

DURING the period under review the health of the community has been fair. The foreign population amounts at present to about 300 persons, most of whom are resident on Shamien. The erection recently on the island of a number of new houses has afforded accommodation for several who formerly resided in Honam and Fati, but a considerable number of missionaries and members of the Customs out-door staff still occupy houses in these suburbs, as also down river near the hospital.

Eight births and seven deaths have to be recorded. The causes of the latter were:—

1. Alcoholism and dysentery.
2. Alcoholism and epilepsy.
3. Phthisis.
4 and 5. Typhoid fever.
6. Gunshot wound of the head (suicidal).
7. Pneumonia.

The two deaths from typhoid fever occurred in the case of a husband and wife, both of whom were about 60 years of age and had resided the greater part of their lives in America. The former had been in feeble health for some months, and readily succumbed to the disease; while the latter, whose case was complicated by Bright's disease, died in the seventh week of illness.

Of late years typhoid fever has not been a frequent disease among residents on Shamien, who no doubt owe this immunity to the excellent sewage arrangements. Nightsoil is disposed of by the pail system, while rain and bath-room water and waste from cook-houses are carried off by the drains. These drains are flushed by the rise and fall of the tide, so that it is only in exceptionally dry weather, when the river is low, that any accumulation of filth is likely to occur. During the past two years the enterprising builder has been at work, with the result that several terraces of new houses have been erected in the east end of the island, which is now somewhat too crowded to permit of the same sanitary conditions as formerly existed. The drainage system of such houses demands careful attention in the dry season, otherwise blocking with refuse from cook-houses, etc., is likely to take place—an evil which can easily be averted by frequent flushing with water from the wells or river.

In addition to the two fatal cases alluded to above, two other cases came under observation.

In one case, resident on Honam, the disease appeared to be malarial, and the temperature reached normal on the 16th day. On the 20th day some indiscretion in diet was followed by a recurrence of fever and the appearance of the characteristic eruption and stools. The patient made a good recovery.

The greatest desideratum in this port is a pure water supply. At present most residents derive water for drinking and cooking purposes from Hongkong, whence it is daily conveyed by the river steamers. This supply is not devoid of disadvantages, for apart from the trouble entailed by such a long transit, the water is liable to contamination *en route*, and besides, when the quantity in the Hongkong reservoir runs low, and the inhabitants there are put on short allowance (a contingency which does occur), the source of water for Canton must be doubtful.

A few missionary residents collect rain water and store it in earthenware jars, for use in the dry season.

The wells sunk in Shamien furnish an abundant supply, but such is simply river water percolating through the sand and mud of which this artificial island is composed, and although fairly clean and suitable for bathing and cleansing, is not regarded as particularly wholesome for cooking purposes. It is, however, more largely employed in this way than householders suppose. Similar wells exist all over the city of Canton, but in dry seasons, such as at present, they become very filthy and unwholesome, so that this water is little, if at all, superior to that obtained from the river. On the White Cloud and other hills near the city there are a few springs of pure water, but such is a luxury reserved for making tea and boiling opium.

Looking at the basin in which the city lies, and judging from the configuration of the surrounding country, we can most reasonably infer that the boring of artesian wells would be attended with success. No doubt, in order to obtain a pure and copious supply, these borings would require to be deep—possibly 300 feet or more,—and some rock might be encountered in the process; but these drawbacks are not to be weighed against the inestimable benefits that would accrue to both foreigners and the many thousand natives who have not known the luxury of pure water. The scheme is no visionary one, but both from a sanitary and financial point of view appears worthy of the attention of a company sufficiently enterprising to undertake its development.

During the early months of 1893 small-pox prevailed among the Chinese in the city, but not to any great extent. Only one foreigner contracted the disease.

In the beginning of summer many cases of fever occurred in the south-east quarter of the city, several of which came under treatment in the mission hospital. Many of these were cases of typhoid; in only one was it found possible to make a postmortem examination, but in this the characteristic appearances in the ileum were observed. It is noteworthy that in the bile ducts of this patient several specimens of Distoma Sinense were found. The health of the city was good from this time onwards until the outbreak of the bubonic plague, towards the end of March 1894. This epidemic prevails at the date of writing, and has extended to the surrounding towns and villages, as also to Hongkong.

I append hereto an abstract of the meteorological tables kindly furnished by Mr. J. H. May, Chief Tidesurveyor and Harbour Master.

Abstract of Canton Customs Meteorological Tables, April 1893 to March 1894.

Month.	Wind.							Weather.			Barometer.				Thermometer.			
											Day.		Night.		Day.		Night.	
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Calm.	Average Hourly Force.	No. of Days Fog.	No. of Days Rain.	Rainfall.	Highest Reading and Average Highest.	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.
1893.							*miles*			*Inches*	*Inches*	*Inches*	*Inches*	*Inches*	°	°	°	°
April	3	14	3	...	10	...	5.6	...	15	6.09	30.350 30.107	29.810 30.025	30.282 30.065	29.730 30.009	88.00 78.40	56.00 71.30	80.00 73.60	55.00 69.10
May	3	10	...	1	16	1	6.1	...	20	8.33	30.190 30.026	29.820 29.964	30.106 29.981	29.780 29.941	93.00 82.00	66.00 75.90	84.00 77.30	62.00 73.30
June	1	20	4	...	5	...	5.8	...	18	7.83	30.140 30.024	29.780 29.971	30.070 29.989	29.800 29.949	95.50 87.20	70.00 82.40	85.00 81.40	66.00 78.50
July	...	12	9	...	10	...	5.5	...	17	4.63	30.044 29.928	29.726 29.881	30.020 29.908	29.720 29.869	95.00 87.70	75.00 82.30	86.00 82.00	73.00 79.20
August	1	14	2	...	14	...	4.8	...	20	4.47	30.094 29.945	29.755 29.886	30.020 29.907	29.780 29.868	96.00 89.40	79.00 83.40	89.00 82.90	76.00 80.20
September	11	5	...	2	12	...	8.1	...	13	4.93	30.100 29.955	29.516 29.889	30.180 29.943	29.430 29.867	97.00 87.60	74.00 81.20	88.00 81.00	69.00 77.50
October	21	...	...	...	10	...	8.5	1	8	5.56	30.410 30.167	29.600 30.084	30.322 30.120	29.646 30.062	90.00 81.30	71.00 75.00	81.00 74.00	62.00 70.40
November	14	...	...	1	15	...	6.3	1	...	...	30.420 30.355	30.190 30.262	30.342 30.290	30.200 30.261	85.00 75.30	56.00 66.80	74.00 66.10	48.00 61.40
December	16	2	2	...	11	...	6.0	1	2	0.01	30.490 30.344	30.126 30.254	30.440 30.281	30.106 30.246	77.00 68.60	47.00 58.70	68.00 60.40	44.00 54.70
1894.																		
January	13	3	...	3	12	...	7.0	5	13	0.80	30.480 30.259	29.926 30.178	30.420 30.219	29.942 30.169	75.00 62.40	43.00 56.60	70.00 58.80	42.00 55.00
February	5	4	1	1	17	...	6.1	1	11	0.31	30.520 30.323	30.092 30.237	30.440 30.269	30.074 30.234	79.00 68.00	42.00 60.00	69.00 62.00	36.50 57.00
March	8	10	2	...	11	...	6.5	5	17	1.87	30.444 30.203	29.900 30.120	30.386 30.147	29.900 30.114	83.00 67.70	47.00 61.60	75.00 64.40	45.00 59.90

DR. A. SHARP DEANE'S REPORT ON THE HEALTH OF PAKHOI

For the Year ended 31st March 1894.

THE year under review compares unfavourably with preceding years, inasmuch as an epidemic of remittent fever with diarrhœa prevailed among children from June to the end of August; and again in January small-pox broke out, followed, in March, by influenza and bubonic plague.

FOREIGN RESIDENTS.

On the 27th February another male child was born, making a total of seven males, against two females, born here since the opening of this port.

The child mentioned in my last Report as born in 1892 died on the 18th June 1893 from inflammatory diarrhœa of the most fatal type.

Remittent fever, with or without diarrhœa, attacked three children, aged respectively 11 months, 2 years and 3½ years.

The child 11 months old contracted remittent fever, with high temperature, which gave place to an intense form of inflammatory diarrhœa that could be checked by no treatment. Nervous symptoms supervened, and death followed in eight days from the commencement of the diarrhœa. A finer specimen of a child and one more likely to resist disease could hardly have been seen.

The child 2 years old suffered somewhat in the same way, but the diarrhœa was of a mild character. This case was complicated with lumbrici, and it was thought at Hongkong, where the child was sent for change of air, that the fever was due to the presence of worms, which apparently was not the case, for on the child's return to Pakhoi the fever came on again, and it was not until some months later that convalescence was complete.

In the remaining case the child suffered from remittent fever, with high temperature and nervous symptoms, but without diarrhœa. This critical state continued for 10 days, after which convalescence was protracted for two months.

A prominent symptom in these cases was intense thirst. Night and day the children hardly ever ceased to call out for drink.

An engineer on board one of the steamers became infected here with variola. He was taken to Hongkong, and there treated as a severe case of the confluent variety of the disease.

Three members of the community suffered from influenza during March, the weather at the time being hot and cold alternately, with a thick, damp atmosphere.

Nervous symptoms were prominent, particularly pain in the head and back, and in two cases reflex vomiting occurred.

Bronchitis, listlessness, debility and anorexia were marked symptoms during convalescence.

Native Population.

Remittent fever with diarrhœa prevailed among children from June to the end of August, and proved rapidly fatal in those under 2 years of age.

Variola was first noticed during the second week in January, and reached its height towards the middle of March. This epidemic was severe, but pitting was much less noticeable than before the system of vaccination.

Vaccination with imported calf lymph is year by year gaining in favour, and at the present time is largely practised. This is owing, in the first place, to the introduction here of the foreign system by Dr. Horder, at the Church Missionary Society Hospital; and, secondly, the observation of the good results following vaccination at Hongkong and in Tonkin has induced the Chinese to adopt the practice here. The lymph is imported from Hongkong, and then arm-to-arm vaccination follows among the poorer people, but those who can afford it prefer the imported lymph.

Influenza was prevalent about the middle of March, but on this occasion was not nearly so severe as during the epidemic in the spring of 1892.

Bubonic plague, known locally as *li-tzŭ-chêng* (瀝子症), though falsely rumoured to have been present during the spring of most years since 1884, is now, at the date on which this Report ends, after an absence of 10 years, making its appearance in Pakhoi. Endemic as the disease is to this part of China, the outbreak on the present occasion has its origin in the filthy state of the town, from want of rain, of which we have had, I may say, none since last September. Only a few cases have been reported; some of these were brought to the Church Missionary Society Hospital in a moribund state, hopelessly beyond medical aid. The disease so far cannot be called epidemic, for it is only those living in the most loathsome parts of the town who contract it, and beyond these localities it has not extended. But what proportions this outbreak may assume depend entirely upon the continuance of the drought.

During May 23.94 inches of rain fell, extending over a period of only 14 days, while in Kwangsi and the interior of this province the rainfall was still heavier. The small rivers being inadequate to carry off such a sudden downpour, the country became flooded, and considerable damage to life and property was reported. As direct evidence of this, we were eye-witnesses to the dead bodies both of human beings and cattle, the roofs of houses and *débris* of various kinds passing down the bay for upwards of six days, having been cast out by the river flowing through Lien-chou.

The frost during January 1893 destroying the potato crop, and the floods of the following May sweeping away the rice crop as well as large quantities of paddy, a famine was then averted only by the prompt importation of rice from Hongkong and Tonkin.

Now plague, pestilence and famine threaten from drought, for during the six months from the 1st October to the 31st March only 2.73 inches of rain were registered; consequently, rice and other crops, which should have been sown in the beginning of February, are still unplanted or have died off from want of rain.

Such a continuance of dry weather cannot exist for long without sickness following. Plague has already commenced, and in all probability, when the heavy rains set in, bowel affections—cholera, diarrhœa and dysentery—will be more prevalent than they have been for some years past.

In the appended meteorological table the temperature has been taken according to the rules laid down by the Astronomer at the Hongkong Observatory.

METEOROLOGICAL TABLE, April 1893 to March 1894. (Latitude, 21° 29′ N.; longitude, 109° 6′ E.)

MONTH.	THERMOMETER.			Rainfall.	MONTH.	THERMOMETER.			Rainfall.
	Highest.	Lowest.	Mean.			Highest.	Lowest.	Mean.	
1893.	° F.	° F.	° F.	Inches	1893.	° F.	° F.	° F.	Inches
April	89	55	74.95	2.01	November	85	54	71.00	...
May	91	65	78.98	23.94	December	77	47	65.00	...
June	97	72	84.90	4.87					
July	94	73	83.00	15.49	1894.				
August	95	73	83.61	16.18	January	78	42	61.50	0.93
September	94	69	81.43	11.89	February	80	42	62.30	...
October	89	62	75.00	0.80	March	84	46	65.00	1.00

Dr. E. B. LANDIS'S REPORT ON THE HEALTH OF CHEMULPO (JENCHUAN), COREA,

For the Half-year ended 31st October 1893.

Abstract of Customs Meteorological Tables, May to October 1893.

Month.	Winds.						Rain, Snow and Fog.				Barometer.				Centigrade Thermometer.				Dry Bulb.	Wet Bulb.
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Calm.	Average Hourly Force.	No. of Days Rain.	Total Rainfall.	No. of Days Snow.	No. of Days Fog.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Average.	Average.
						Miles	*D. h.*	mm.	*D. h.*	*D. h.*	mm.	mm.	mm.	mm.	°	°	°	°	°	°
May.....	8	2½	13	4½	3½	10.6	4 5	136.6	...	2 0	775.60	755.38	771.38	757.98	+29.5	+12.1	+14.6	+ 4.0	+14.8	+12.7
June.....	2	1	19½	3½	4	10.5	3 9	166.4	...	5 12	765.16	754.10	764.80	754.62	+27.5	+19.2	+21.0	+11.5	+19.4	+17.6
July	½	3	21½	4½	1½	10.5	3 15	137.1	...	7 12	774.69	752.58	767.07	754.37	+35.6	+23.1	+25.0	+19.5	+25.4	+23.8
August....	4½	2½	15	7	2	10.2	2 1½	221.4	...	1 0	764.55	750.42	763.76	751.28	+35.0	+24.7	+25.5	+18.5	+25.9	+23.9
September	10½	3½	7½	6	2½	13.0	7 2	366.2	...	3 0	769.40	748.57	769.96	740.00	+29.1	+18.3	+23.5	+10.6	+20.7	+19.3
October ...	12	2	4½	11	1½	14.0	2 2	71.3	...	2 12	776.46	758.94	774.58	759.70	+23.6	+11.4	+15.5	+ 1.5	+13.7	+10.8

The general health of the foreign community (which consists of only 25 persons) is good. During the last six months there were no deaths and not a case of sickness.

Among the Japanese, however, there was a large mortality from pulmonary phthisis. This is due to the fact that a great many of them are natives of Nagasaki and the south of Japan, where the climate is much milder than in Corea. Coming to a more severe climate, with a suicidal carelessness in matters of hygiene, and especially in dress, with the chest always exposed, makes them easy prey to the sudden changes in weather for which this port is noted. Phthisis in the Japanese, as in the Coreans, runs a rapid course, and almost always terminates fatally. It is very rare indeed for any treatment to affect the course of the disease to an appreciable extent after it has once taken a firm hold of the patient. I have not yet been able to get the statistics as to the causes of death among Japanese at this port, but I think I am safe in saying that almost 40 per cent. of the deaths is due to this disease alone.

The sick and death rates of the Chinese are low compared with those of the Japanese. There have been four deaths during the last six months out of a Chinese population of about 800. The causes of death were:—

Apoplexy	1	Pneumonia	1
Phthisis	1	Excessive opium smoking .	1

This makes a death rate annually of 10 per thousand. Judging from the imperfect data I can get, the Japanese death rate is more than double, *i.e.*, 22 or 23 per thousand.

Among the Chinese from Southern China I have met with three cases of beriberi during the last six months. I have also treated seven Corean patients. Among the Japanese I have not seen a case, but this may be accounted for by the fact that I treat but a comparatively small proportion of the Japanese patients.

With the Coreans the death rate has not been higher than the average of former years. In the spring and early summer malarial fevers, and in the summer and early autumn diarrhœa and dysenteric affections, claim the larger number of victims. Anal fistulas and hæmorrhoids are very frequent. Not only does the general diet tend to produce constipation, but hot peppery sauce enters into the composition of almost every dish, and hence causes indigestion, which leads to constipation and rectal troubles. What is more serious than either of the above is rectal prolapse, which is not infrequent.

DR. JAMES H. McCARTNEY'S REPORT ON THE HEALTH OF CHUNGKING

For the Half-year ended 30th September 1894.

THE past six months have been very trying to nearly all the foreign residents in Chungking. The temperature was higher than last year, but the atmosphere was not so damp. The summer has been the driest since the establishment of the Customs here. Nearly all the foreign residents left the city during the period of the greatest heat.

With the exception of the old enemy—malaria—and three cases of acute dysentery, there is nothing to report affecting the foreign community. The *han-ping* remittent fever, together with diarrhœa and dysentery, have been severe among the natives. The fruits which we have in abundance during July and August are of a very inferior kind, and in 99 per cent. are the cause of the digestive disturbances.

I have the following cases to report:—

Retention of Urine for 11 Days.—The patient, a Chinese lady, gave birth to a child 11 days previous. When called I found the patient in great pain and feverish. The abdomen was greatly distended. Gave an anæsthetic, on account of the patient's fear of pain. The catheter was introduced, and nearly 1½ gallon of highly-coloured urine was drawn off. There were no bad after effects, and patient made a good recovery.

Imperforate Anus.—Male child, 3 days old; without the least impression where the anus should be. The perinæum was dissected to the depth of about 1 inch, when I came upon the rectum, terminating in a blind pouch. The gut was opened, drawn down and stitched to the opening. When opened, a large quantity of meconium was evacuated. The child made a good recovery.

Closure of the external Genitals by Cicatrisation.—The patient, a girl about 15 years of age, was brought to me with the external genital opening closed, with the exception of a small aperture through which the urine was passed. The labia pudendi were totally destroyed, and the vaginal opening was closed with the cicatrix. A burn was caused by the girl setting her clothing on fire with a charcoal basket which she carried under her clothing. A large portion of the scar tissue was dissected away; what was left of the labia were separated, and kept apart while they healed. The healing was slow, but a good result was obtained.

Radical Operation for Hernia.—The patient, a young man, single, had double inguinal hernia from birth. It was always reducible, and gave him no pain. He was first seen about four years ago, while on a journey, but was lost sight of until he unexpectedly turned up at one of the dispensaries. At this time the scrotum was distended to the size of a 2-gallon bucket. It interfered greatly with his locomotion, and he desired to have it operated upon. He was taken to the hospital; the parts were shaved and disinfected. The right side was first operated upon. The Banks's operation was performed. Two silver wire sutures, in place of silk, were introduced, and the pillars drawn in apposition. No drainage was used. Had slight rise of temperature for a few days, owing to formation of pocket of pus round one of the sutures. Superficial stitches removed in seven days. Result perfect.

Leprosy.—Of over 600 cases of skin disease, I saw but six cases of leprosy; two of these were of the anæsthetic and four of the tubercular variety. Of the four sufferers who came to the hospital, one remained a week, one about two weeks, one about a month, and one is still in hospital. The first two were treated with gurjun oil and tonics; the others, with a 20 per cent. creoline ointment. During the short time the first two remained no improvement took place; the others were greatly benefited, and the one at present in hospital is probably cured.

Cancrum Oris.—Several cases have been seen in children from a few months to 3 years of age. The patients were always brought when it was useless to attempt treatment. The accompanying reproduction from a photograph illustrates the average case seen.

For the appended meteorological table I am indebted to Mr. Tidesurveyor W. STEBBINS.

METEOROLOGICAL TABLE, April to September 1894.

MONTH.	THERMOMETER.				BAROMETER.		RAINFALL.
	Dry Bulb.	Wet Bulb.	Maximum.	Minimum.	Highest.	Lowest.	
	°	°	°	°	*Inches*	*Inches*	*Inches*
April	95	78	97	50	29.30	28.76	1.96
May	88	86	90	61	29.22	28.85	7.82
June	87	79	97	67	29.07	28.82	3.66
July	98	84	100	72	29.05	28.85	2
August	102	84	104	74	29.16	28.82	3.60
September	90	89	90	61	29.30	29.05	8.05

DR. E. A. ALDRIDGE'S REPORT ON THE HEALTH OF ICHANG

For the Half-year ended 30th September 1894.

THE following abstract is from the meteorological observations taken at the Custom House, Ichang (latitude, 30° 14′ 25″ N.; longitude, 111° 18′ 34″ E.):—

METEOROLOGICAL TABLE, April to September 1894.

MONTH.	THERMOMETER.				BAROMETER.		RAINFALL.	
	Highest.	Lowest.	Average Highest.	Average Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
	° F.	° F.	° F.	° F.	Inches	Inches		Inches
April	93.5	47.0	76.0	57.8	30.50	29.49	10	6.51
May	97.0	52.0	81.0	64.0	30.02	29.60	12	4.70
June	101.0	64.0	89.3	68.2	29.80	29.50	12	8.57
July	105.0	74.0	98.3	78.1	29.80	29.30	9	5.13
August	108.5	70.0	98.5	78.0	30.00	29.50	14	7.79
September	95.0	61.5	80.8	64.5	30.50	29.78	18	9.84

The really hot weather began later than usual, as May and most of June were comparatively cool months, owing to a cloudy sky and frequent showers. The heat during the latter end of August was extreme and almost unbearable; the average maximum reading of the thermometer in the shade from the 17th to the 30th of that month was 104°.5, and the nights were, even for Ichang, unusually close and sultry. The heat broke on the 31st August, when the summer may be said to have ended. The up-river breeze that blows during the summer when the weather is fine does much to mitigate the oppressiveness of the heat. This south-east wind blows usually from 10 A.M. to 5 P.M., being strongest about 3 P.M. and dying down before sunset. Often there is a breeze from the north-east from 8 to 10 P.M., while during the night, if there is any wind at all, it blows down river from the north-west. 42.54 inches of rain fell during 461 hours. September was a wet month and, as is so often the case in the Yangtze Valley, was very unhealthy.

The health of Europeans was good up to the end of August, and with the exception of one case of remittent fever, and that only at its commencement, there was no case attended that gave rise to uneasiness as to the result. In September, however, there were several cases of dysentery and diarrhœa, in some of which recovery was retarded longer than yet observed in Ichang. The proportional number of cases of dysentery, typhoid fever and diarrhœa among

foreigners appears to be higher at Ichang than at other ports. As the drinking water is drawn from the river bank, below the Chinese city and a large junk population, the necessity of personally seeing that it is well boiled before filtration cannot be too strongly recommended. In my experience I have found that this slightly irksome daily duty is much neglected, and that the purity of the water depends too much on the fulfilment of verbal orders to servants and the efficiency of a filter; such faith is too often misplaced. The milk supply is fairly good, but the quality poor, and the adulteration of it by water from an impure source has to be guarded against by boiling.

The health of the Native population was unusually good this summer; there was no cholera and less malarial fever, but in September there were many fatal cases of dysentery.

DR. J. H. LOWRY'S REPORT ON THE HEALTH OF WENCHOW

For the Half-year ended 30th September 1894.

FOREIGN POPULATION, WENCHOW AND DISTRICT.

Male adults	15
Female adults	11
Male children	1
Female children	2
TOTAL	29

The summer has been trying, and there was a good deal of sickness among foreigners. As a slight indication of the amount of sickness, I made 110 visits at the houses of the sick during the months of July, August and September. Among the natives there has been the usual diarrhœa, choleraic diarrhœa, dysentery, and a great deal of fever of a malarial type.

From April to September Dr. HOGG treated, at the dispensary of the United Methodist Free Church Mission, 3,424 medical and surgical cases. Of these, 2,117 were new cases. No record was kept of patients treated up country and on non-dispensary days and hours. During the building of the new British Consulate several cases of accident occurred among the workmen, and they were promptly looked after by Dr. HOGG.

The diseases that I have observed and treated during the past six months have been:—

- Choleraic diarrhœa.
- Congestion of liver and biliary derangement.
- Conjunctivitis.
- Constipation.
- Diarrhœa, simple and tropical.
- Entozoa, intestinal.
- Gout.
- Hæmaturia.
- Hæmorrhoids.
- Incised wound of thumb, with sprained arm (result of heavy fall on Customs Jetty).
- Remittent fever.
- Rheumatic gout.
- Sprue or psilosis.
- Uterine vomiting (pregnancy).

I append an abstract from the Customs meteorological observations taken at this port.

METEOROLOGICAL TABLE, April to September 1894.

MONTH.	Highest Reading of Barometer.	Highest Day Reading of Thermometer.	RAINFALL.		REMARKS.
			No. of Days.	Quantity.	
	Inches	° *F.*		*Inches*	
April	30.100	75	18	7.20	
May	30.200	78	21	9.05	
June	30.000	86	16	11.05	Typhoon on the 29th June; lowest barometer 28.950.
July	29.980	89	4	0.39	
August	29.984	94	8	4.67	Typhoon on the 3rd August; lowest barometer 29.250.
September	30.130	89	10	3.34	

Dr. J. F. WALES'S REPORT ON THE HEALTH OF CANTON

For the Half-year ended 30th September 1894.

For the last six months the health of the Shamien community has been excellent. There were four births and one death; the latter was that of an esteemed resident, from cerebral hæmorrhage.

The freedom from all zymotic diseases, save malaria, enjoyed by those dwelling on Shamien is remarkable, and is undoubtedly due to the absence of sewers and plumbers' handiwork and adherence to the primitive and efficient, though inelegant, bucket system. I have had an experience here of nearly 12 years, and have not seen a case of scarlatina or diphtheria. The few cases of enteric fever which have occurred have very possibly and probably been contracted away from this Concession. September is generally the most unhealthy month; cases of bronchial and intestinal catarrhs and also of mild malarial fevers are more numerous then than during the rest of the year. There are two causes to account for this: (1st) the exhaustion following exposure to the trying heat of a six months' summer; (2nd) the chills often occasioned by the change of the monsoon.

I cannot write about the health of Canton; reliable information is not available. The great missionary hospital in the city receives almost entirely surgical cases, and the members of its staff know little or nothing of the diseases which may prevail outside.

The terrible outbreak of bubonic plague has been the event of this year. I will not refer to its clinical and pathological characters, as they have been frequently and fully discussed by those who have had special opportunities for observation and study. The first notice of the outbreak appeared in a native newspaper dated 14th March, which stated that the officials had ordered the cleansing of the streets because of the unusual sickness which so extensively prevailed. At the end of March a foreigner living within the city became affected. After the 1st April there were frequent references to the disease in the native newspapers. In May the plague was at its worst. I have it on good authority that during the 3rd, 4th, 5th, and 6th Chinese months 90,000 coffins were sold—probably only 75 per cent. were for plague cases. By the end of July the pestilence had in great part disappeared simultaneously from here and Hongkong, although sporadic cases are likely to crop up for months to come. This coincidence is remarkable, for in Hongkong the most vigorous sanitary precautions were taken and enforced, whereas here no means whatever appear to have been used to check its spread and progress. In a recent issue of the *British Medical Journal* the plague mortality was given as high as 97 per cent.; this is probably an exaggeration. Of nine foreigners attacked (one in Canton and eight in Hongkong), only two died, and one of these deaths is stated not to have been caused by the plague. It is difficult to form an accurate estimate of the virulency of bubonic plague. To do so we might contrast its mortality, if the same could possibly be discovered, with that

of Asiatic cholera or with that of the recent great outbreak of influenza in Europe. We must also consider the habits and surroundings of the majority of its victims and the great over-crowding and privations which the poor in Canton and Hongkong have to endure, and which so impairs their vitality that they frequently succumb to attacks of pyrexia that would not be fatal to foreigners. Apart from this over-crowding and oftentimes starvation, it is a mistake to think that the habits of life of the poor are more insanitary than those of the richer Chinese. Exercise for health's sake is absolutely unknown to them. Small wonder, therefore, is it that the widespread prevalence of so serious a disease as bubonic plague should be attended by a high mortality. These considerations make it doubtful whether its occurrence among the healthy and robust is more to be feared than that of other diseases with which we are better acquainted. A noticeable feature of the plague was the mixture of panic and apathy displayed. The wildest rumours and most absurd stories about gods, devils and foreigners found ready credence, while when a case of plague actually occurred the most stupid neglect and want of humanity was often shown. Not infrequently the whole family would bolt incontinently, without leaving anyone to attend to the patient.

That it is not conveyed like cholera, dysentery or enteric fever is more or less evidenced by the wonderful immunity enjoyed by the boat population. At low water one would think that there was enough filth exposed in the numerous creeks and canals, which traverse this city in every direction, to have favoured the spread of the disease. This immunity was probably due to the tidal ebb and flow, the constant out-door exercise and the well-known cleanly habits of the sampan people.

It is noteworthy that in May, when the plague was at its worst, a number of Shamien residents suffered from lymphatic enlargement and tenderness, and in two cases the parotid glands were so swollen that the patients appeared to have mumps. All these symptoms occasioned no trouble, and passed off within a few days. It has been noticed in epidemics of cholera and diphtheria how frequent are cases of diarrhœa and ordinary sore throat; possibly these cases of gland irritation occupy a similar relationship.

The great mortality among children can easily be accounted for when we see the extreme disregard of cleanliness in their management. The children of rich people wear filthy clothes and often suffer from loathsome skin diseases, while those of the poor can be seen most of their time grubbing in the dirt and drains.

The plague took district by district, street by street, and at any given time appears never to have been evenly distributed. Thus, early in the epidemic a street in the city named Tin Tong was attacked; then it became quite free until near the end of the outbreak, when many cases again broke out. The villages and country districts—apart, of course, from Fatshan, Shiklung, Chantsun and such-like large towns, where, practically, like conditions to Canton obtain—appear, so far as can be learnt, to have been remarkably free from the disease. Reports were spread about the terrible outbreaks in the country, but these were not authenticated, and persons living there stated that very few cases occurred, save among fugitives from Hongkong and Canton. Dr. KUENE, of the German Mission Hospital at Tungkun, states that over 200 plague patients came there from Hongkong. In spite of this importation, there was no outbreak of the plague nor fresh cases in that town.

Mr. Chief Tidesurveyor MAY has supplied the appended abstract of the Canton Customs meteorological tables.

ABSTRACT of CANTON CUSTOMS METEOROLOGICAL TABLES, April to September 1894.

Month.	Wind.							Weather.			Barometer.				Thermometer.			
											Day.		Night.		Day.		Night.	
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Calm.	Average Hourly Force.	No. of Days Fog.	No. of Days Rain.	Rainfall.	Highest Reading and Average Highest.	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.	Highest Reading and Average Highest	Lowest Reading and Average Lowest.
							miles			*Inches*	*Inches*	*Inches*	*Inches*	*Inches*	°	°	°	°
April	4	17	...	...	9	...	5.4	3	13	6.50	30.180 30.094	29.940 30.027	30.190 30.051	29.864 30.004	89.00 78.20	54.00 72.30	79.50 73.30	53.00 69.50
May	3	12	3	...	13	...	6.9	...	17	7.68	30.170 29.997	29.800 29.934	30.100 29.961	29.786 29.920	94.00 85.00	68.00 79.30	84.00 79.10	66.00 75.80
June	...	18	2	...	10	...	6.3	...	23	15.64	30.060 29.923	29.710 29.876	30.032 29.906	29.700 29.858	97.00 85.40	75.00 81.30	88.00 80.50	73.00 77.80
July	...	19	3	...	9	...	5.9	...	19	6.03	30.050 29.933	29.790 29.891	30.042 29.915	29.760 29.872	95.50 88.50	77.00 83.10	85.00 82.30	74.00 79.10
August	...	22	2	1	6	...	5.5	...	18	14.09	30.108 29.915	29.608 29.873	30.068 29.894	29.608 29.859	99.00 88.30	77.00 82.70	90.00 82.80	74.00 79.90
September	9	8	1	...	12	...	8.6	...	18	5.07	30.100 29.983	29.670 29.908	30.070 29.959	29.750 29.917	96.00 88.10	77.00 82.20	87.00 82.10	75.00 79.20

DR. J. L. MICHOUD'S REPORT ON THE HEALTH OF MENGTSZ

For the Year ended 30th April 1894.

SITUATED in latitude 23° 34′ N., longitude 103° 36′ E., Mengtsz lies in the southern part of the province of Yunnan, in the middle of a huge plain, 20 miles long and 12 miles wide, elevated 4,500 feet above the sea level. On all sides this plain is encircled by mountains reaching in height from 2,000 to 5,000 feet. We thus get a total average height of 6,000 to 9,000 feet for the southern mountain range of Yunnan. About 100 miles to the southward, on the Tonkin frontier, this mountain range begins to diminish in altitude towards the centre of Tonkin. Uninterrupted series of high mountains and highlands run to the west and the north—on the one hand, up to Burma; on the other, to the River Yangtze. Eastward the chain ramifies in the Kweichow, Szechwan and Kwangsi provinces.

From a bird's-eye view the physical aspect of Yunnan presents a vast network of mountains with ridges from 6,000 to 10,000 feet high, whose meshes, more or less wide, more or less deep, are occupied by innumerable plains or valleys, forming highlands, situated at heights varying from 4,000 to 6,000 feet. The general geological structure of the Yunnanese mountains is conglomerate, sandstone and limestone; that of the highlands is mostly clay. Alluvial deposits are met in many places, testifying that, as was the case with the Mengtsz plain, these spaces were once covered by water. Many lakes, large and small, are found in the highlands, sometimes drying off completely and sometimes overflowing the surrounding country, probably the mysterious sources of many of the great rivers which originate in the Yunnanese mountains and afterwards take every direction—north, south, east and west.

Landslips are not infrequent in Yunnan, as the special nature and arrangement of the different strata of the soil do not secure its stability. It may happen, too, that in their subterraneous way across variously constituted layers of ground the drainage waters of lakes find points of least resistance and excavate enormous underground gaps, which later on bring about landslips or the sinking of mountains.

Earthquakes, too, are comparatively frequent, but of very slight intensity. Dr. WELLS WILLIAMS, however, reports in *The Middle Kingdom* that a dreadful upheaval, which occurred in 1834, lasted three days, and overthrew the greater part of the capital, Yunnan-fu.

Yunnan is not over-crowded by population, as many provinces in China are. We shall see further on that if in certain places infertility of the mountain soil may explain this fact, there are also several other causes to account for the scarcity of inhabitants.

The Chinese population of Yunnan inhabit the large plains, where they have founded important cities. Long since expelled from their former seats, the aborigines live in mountains or remote valleys, far from Chinese society. Owing to its constitution, the mountainous soil

is mostly infertile, while that of the plains, clayey but loaded with humus and carefully manured, magnificently rewards the labourer who devotes himself to its cultivation. Unfortunately, great inconvenience is experienced through the want of hands, and many tracts on the plateaux still lie waste. In the Mengtsz plain, for instance, we find hardly two-fifths of this large and fertile tableland under cultivation. To the traveller journeying between Mengtsz and Yunnan-fu the country displays an endless succession of mountains and plains or valleys, some naked and barren, others covered with pleasant gardens or vast rice fields, or desolate and waste in spite of the richness of the soil.

Viewed as a whole, vegetation is very scanty in Yunnan. Systematic deforestation of mountains, which prevails extensively all over China, has long since been practised in Yunnan. After leaving the Tonkinese frontier the traveller finds a striking contrast between the densely-wooded Tonkin hills and the almost barren mountains on the Chinese side. In crowded parts of China every deforested spot of land is soon brought under cultivation. This serves a double purpose: the wood is utilised as fuel or as building material, while the soil is rendered available for agriculture. In Yunnan no such double purpose is sought. Partly because of the infertility of the soil, partly because of the small number of inhabitants, the lands deprived of trees remain uncultivated, no vegetation except a bad scanty grass taking the place of the destroyed forests. We know that by the process of vegetable respiration oxygen is emitted and carbonic acid absorbed. Therefore in some way the composition of the atmosphere must be influenced by the absence of vegetation or by its scarcity on very extensive tracts of land. Hence we can easily conclude that in Yunnan to the normal diminution of oxygen on highlands may be added this other cause, reducing the amount of the gas, viz., deforestation. We shall see by-and-by that important pathological problems are connected with this question.

In a medical report it is not necessary or advisable to dwell upon the productions of a country so far as they do not concern its medical constitution or special pathology. Nor can we be expected to furnish exhaustive information about the peculiar morals, occupations or professions of the inhabitants. We shall state only that the people of Yunnan, like those of the rest of China, are mostly agricultural. Trade is confined to the towns. Some districts, rich in precious minerals, are mainly occupied by miners. The chief agricultural products are rice, maize, sorghum, sweet potatoes, beans, the poppy and, in some places, tea. In the Mengtsz plain two crops are gathered in the year, namely, millet and rice during the summer, and peas, the poppy and wheat during the spring. Many fruit trees belonging to temperate climates are found, such as the apple, pear, peach, plum, chestnut, pomegranate, etc. Among important mercantile products we must first quote Yunnan opium, which, on account of its cheapness and superior quality, finds a ready sale in Tonkin and the southern provinces of China. This opium is obtained, when the plant is ripe, by means of incisions made in the poppy bulb with a special three-bladed knife. On the day following this operation the farmer, by scratching the bulbous receptacle, gathers in an earthen basin the inspissated juice, which later on will be sold, after drying, as raw opium. No adulteration is practised, and the product accordingly maintains a good reputation.

Neither the production nor the consumption of native alcohol is large; it is distilled from rice, sorghum, etc. Notwithstanding its 30 distilleries, Mengtsz manufactures but little alcohol,

owing to the very primitive machinery in use. The Chinese smoke opium, but do not take to alcohol; the aborigines, who avoid opium, drink spirits.

Other valuable products of Yunnan are due to the mineral wealth of the province. Tin, copper, silver and gold abound in many districts, if we may trust Mr. ROCHER's book; but few mines are worked.

The climate of Yunnan is not uniform all over the province, and differs widely from the north to the south. According to the classification of general climates, it is one of exception, one of the so-called partial climates. Owing to the considerable altitude of the northern plateaux the climate is there quite temperate. The lower altitude of Southern Yunnan and its situation under the tropic of Cancer render its climate hotter. It should, however, be placed not among hot but among mild climates. To this region, and especially to Mengtsz, the following lines will be devoted.

We are indebted to Mr. LYE, of the Mengtsz Customs, for the appended abstract from the meteorological readings for the year 1893:—

METEOROLOGICAL TABLE, January to December 1893.

Month.	Winds.						No. of Days Rain.	Thermometer.				
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Calm.		Highest.	Average Highest.	Lowest.	Average Lowest.	Average Temperature of the Day-time.
								° F.	° F.	° F.	° F.	° F.
January	1	14	7	1	8	...	3	79	68.58	33	48.19	57.30
February	...	12	13	...	2	1	3	87	76.72	45	52.54	62.60
March	...	14	11	...	4	2	13	88	74.06	45	57.90	64.50
April	1	12	11	...	1	5	14	93	80.56	51	61.66	69.00
May	...	15	12	...	2	1	14	91	79.64	53	64.74	71.20
June	...	15	14	...	...	1	18	84	77.33	67	69.60	73.80
July	...	14	13	...	...	4	22	83	76.74	68	69.60	73.00
August	1	13	9	...	4	4	20	81	77.90	65	69.26	73.70
September	...	13	6	...	6	5	10	87	77.06	60	67.46	72.00
October	...	21	7	1	2	...	4	86	74.89	55	60.07	67.20
November	4	16	8	...	2	...	8	85	73.80	45	52.73	58.50
December	7	15	8	1	...	...	2	73	66.75	37	43.00	55.40

Adding the monthly thermic averages, we get the annual thermic average of 66°.5 for the year 1893. Thereby we come to the conclusion that the climate is not tropical, though geographically speaking Mengtsz is a few minutes within the north tropical circle. The mere reading of the maxima and minima monthly averages points out extensive variations of temperature in the nycthemeron, which is characteristic of climates of altitude in the tropical

zone. In hot months this daily discrepancy does not exceed from 8° to 10° F.; in cold months it reaches 20° or 23° F. Altitude is not the only cause of such considerable daily oscillations.

According to the preceding table the prevailing wind comes all the year from the south. Want of necessary instruments prevents our giving accurate indications about its force. Rising in the morning at 9 or 10 o'clock, it blows during the whole day, ceasing only at midnight. We can say that its violence in winter, aided by its constant direction, is such as to be the most valuable means of propulsion for native junks on their way up the strong, steep current of the Upper Red River. Raising considerably the thermometric indications in the daytime, it is easy to understand that its absence during the greater part of the night makes the normal difference between day and night temperatures more sensible. In summer it blows only intermittently and with much less strength; it varies in direction at this season, and sometimes is interrupted by periods of calm.

Although the great difference of thermometric range between day and night may be thus sufficiently explained, the state of the sky must also be taken into account. During winter the heat absorbed by the soil in the daytime is radiated at night through cloudless pure skies towards the planetary spaces; hence there is intense cooling at night. In summer clouds shroud the sky, and as they diminish the radiation, diminish the cooling.

The difference between the winter and summer thermic means in Southern Yunnan is not, however, that of so-called excessive climates, as Peking or New York, for instance. We may perhaps compare it to the difference indicated in variable climates. The above table points out a difference not exceeding from 15° to 20° F., which figure keeps up only for a third of the year, as the temperature of the other eight months is approximately uniform.

The law of the four seasons dividing the year in temperate climates does not apply exactly to Southern Yunnan. As in tropical countries, the two great seasonal periods—namely, the rainy season, or summer, and the dry season, or winter—are indeed here well marked. Short intermediary periods may, however, be admitted, though they participate in the characters of the great season anterior to each of them. So we shall divide the year into "winter," from the end of October to the end of February; "spring," from the end of February to the end of April; "summer," from the end of April to the end of August; "autumn," from the end of August to the end of October. It must be borne in mind that such a division is an arbitrary one, there being in some years no well-defined demarcation between these seasons.

In the highlands the air, as a rule, is but little charged with moisture. If on some elevated points of the globe deficiency in dampness is due to the absence of broad expanses of water, in many others, where no such reason exists, the scanty evaporation of sheets of water, resulting from the ordinary low temperature, may be called into account, and will thus give a satisfactory explanation of the comparatively pronounced dryness of the atmosphere in highlands; for, as NIELLY says,* the higher the temperature of a place the greater generally will be the fraction of saturation of its atmosphere. In Yunnan other causes of this dryness

* *Hygiène des Européens aux Pays chauds*, p. 63.

may be found in distance from the ocean and the remarkable scarcity of vegetation, already recorded.

Rains are infrequent at Mengtsz during the winter months. Occasionally in spring short rainy periods set in; in 1893 they were of exceptional duration. In fact, heavy rains only begin in July, and cease definitely by the end of September. During October and November the sky remains overcast, letting fall but few showers; the crops are gathered in; the fields, no longer clothed in vegetation, are covered with vegetable *débris;* fermentative and putrefactive processes are in the highest state of activity; the marshes dry off; the waters of the springs, no longer confined for irrigating purposes, are given free exit towards the big lake lying to the north of Mengtsz. It is the time of appearance of malarial fevers. The natives dare not move away from their homes or undertake any journey, especially the journey from Mengtsz to Manhao. The mafoos entrusted with the caravans plying between these points and the couriers in charge of mails going overland from Mengtsz to Laokai and conversely are decimated by the mountain fever—*Man-tu* (蠻毒), "Manhao poison," or *chang-ch'i* (瘴氣), "malarial air," as the Chinese call it,—this much-disputed type of malarial disease. We must add that no cases of plague are recorded at this time of the year in Southern Yunnan.

Owing to the absence of instruments, we made no observations as to the variations of barometric pressure in Mengtsz. From the situation of the city, at an altitude of 4,500 feet, we may infer a diminution of that pressure, and consequently a relative rarity of oxygen in the atmosphere.

As to electricity, from the law due to PALMIERI, that the atmospheric electricity increases as its relative humidity, we may assume that there is but a small amount of electric fluid in the dry atmosphere of Yunnan. As, moreover, atmospheric ozone originates from oxygen mostly condensed under electric influence, it is easy to see that the diminution of normal oxygen on the highlands can only admit of a scanty production of ozone.

At the beginning of this study we mentioned the geographical situation of Mengtsz, describing its position in the midst of a large plain some 4,500 feet above the sea level. All parts of that plain are not, however, uniform. Hilly eminences emerge above the general level of the ground, with countless graves dotted over their tops and slopes, the whole area forming a vast necropolis, picturesque to the eye, though not pleasing to the mind. It may be said that one-fifth of the huge plain of Mengtsz is devoted to sepulture, and that so large a space hardly suffices. The stranger is literally stupefied by the prodigious number of graves. Death travels fast in Mengtsz. Thousands of victims yearly made by plague require to be buried. From a hygienic point of view the choice of burial grounds and the burying processes here adopted, if not objectionable in every respect, show deep ignorance of sanitary requirements. The stratum in which corpses are buried ought to be above the highest level of the ground water fluctuations, because inundations of the subsoil expel the air and suspend the oxidising process. Besides, the bacteriferous layer of the soil should be made use of for burying purposes, for, as the richness in bacteria diminishes from the superficial parts to the lower ones, it is of advantage to bury in the superficial layer, on the surface of the ground, wherein nitrification is the most active.* The second of these rules is strictly observed all over China.

* RICHARD, *Hygiène appliquée*, p. 87.

Coffins are interred at a depth of about 18 inches, or are left on a level with the soil, hidden under a more or less elevated mound of earth. As to the first rule, the situation of graves on hillocks more elevated than the town precludes, in ordinary times, pollution of the ground water by any contact with the organic matter of the surface; but when heavy rains come it must certainly happen that putrefying matter is carried down, owing to the slope of the hills, and sullies the low-lying parts of the country, if not the ground water itself, the level of which is about 10 feet below the surface of the soil.

Many other hygienic faults may be pointed out: in the proximity of the cemetery to the town; in the nature of the soil, consisting of an aluminous clay, through which air and water cannot permeate; in the absence of vegetation on this extensive ground, which a dry, scanty grass hardly covers; and we know that the more rank and the more luxuriant is vegetation the more active are decomposing processes. Finally, we may mention the ignorance of any rule concerning the minimum of space to be assigned to a grave and the rotation of inhumations, which should never be allowed to take place on the same plot of ground more than once every five years,* for, in the contrary case, there would be an accumulation of organic matter never to be consumed afterwards.

The disposition of the dead, so much enlarged upon here, is no doubt in close connexion with the regular annual appearance of plague in Mengtsz.

One-fifth part of the Mengtsz plain being looked upon as cemetery ground, there remain four-fifths to be dealt with, of which one-half may be designated as cultivated or occupied by human communities and the other half as waste or submerged by water. The cultivated part consists of rice or sorghum fields in summer, and of sweet potatoes, peas, wheat fields or kitchen gardens in winter. The waste part is chiefly swampy.

Mengtsz itself extends over an area of about 600 acres. Northwards it is surrounded by large paddy fields; southwards and eastwards it is separated from the country by a long marshy pond. The western outskirts of the town are conterminous with the cemetery. Graves are found among the dwelling-houses. An unbroken defensive wall encircles the city, whose centre is slightly more elevated than its periphery. Hence a natural slope has been formed for every street, by means of which the water in time of rain is easily drained towards the lower parts, exterior to the town. The cleansing of streets is thus facilitated; but up to 1893 the main consequence of that disposition was the formation in these low-lying parts of innumerable pools, noisome reservoirs of organic matter in every stage of putrefaction. In 1894, under the orders of an intelligent official, a large deep moat with sufficient incline was dug all round the city, intended as a collecting drain for carrying away every kind of refuse, filth and rubbish brought down by rain. As in every Chinese town, no well-planned system was ever adopted for the arrangement and grouping of houses. A rudimentary pavement, made of large stones carelessly juxtaposed, favours the cleansing of the streets; but no sewer or interior channel is seen in the thoroughfares. The houses, as a rule, are not storied. Over-crowding prevails in every habitation, there being in each room an enormous disproportion between the air space and the number of occupants.

* RICHARD, *l. c.*

Almost every house possesses a latrine, consisting of an excavation generally secluded in a corner of the inner court-yard. More or less broad and rather shallow, these cesspools are neither dammed up with masonry nor cemented in order to prevent leakage. No cover, no ventilation, prevents the spreading through the premises of exhaled gases, and consequently the habitation is constantly infected. Human excrement is allowed to accumulate there for fully a year, intermingled from time to time with ashes and sweepings. Once a year, in April or May, these latrines are emptied, and their contents carried into the street in front of the house, waiting until bought by a farmer and utilised for manuring purposes. Domestic refuse and vegetable or animal residual products are collected into another heap in the same court-yard, but carried away from the dwelling-house as early as February or March. Domestic animals, such as pigs, ducks and fowls, are kept on the premises, but during the daytime are left out in the streets, where they look for their daily food.

The Chinaman of Mengtsz, like most of his congeners in China, is indifferent to personal hygiene. The habit of washing the body is not practised by him, although he sometimes washes his face. No cleanliness is observed in his garments; slatternliness prevails as well on his outer as on his inner surface. At home he is always barefooted; it is only cold that induces him to protect his extremities. It is needless to say that these remarks apply only to the common people and not to educated Chinese.

The majority of the people live principally on rice and beancurd, mixed with pork, vegetables, fish and fowl, according to each person's means. This diet appears to be abundant and wholesome. It may be taken for granted that the Yunnanese, generally speaking, are not poverty-stricken.

Water is obtained from wells scattered in many corners all over the town. The minimum depth of the wells is 10 feet, hardly enough, according to sanitary requirements, to prevent the percolation of outside impurities. We must not, however, be oblivious of this fact, that the ground is mainly clayey, that is to say, almost impervious. The water is therefore quite fit for drinking purposes, notwithstanding the absence of a protective perimeter and the contamination of the surrounding soil, deeply impregnated with organic matter. It is soft, aerated, palatable rather than tasteless, and is free from any bad odour. We know that the Chinese drink only water that has been boiled, and for the most part that in which tea has been infused. Although the safe consumption of such boiled water cannot be taken as an argument in favour of its innocuity before boiling, we can quote the fact of foreigners having for five years used it, imperfectly filtered through bad charcoal filters, without experiencing any harm attributable to its ingestion.

Since 1889 the foreign community of Mengtsz has until 1894 resided in the centre of the town, accommodated in yamêns lent by the local authorities. The Customs premises, in the matter of bad arrangement, could vie with the more common Chinese dwelling-houses. "*Nécessité fait loi.*" For five years foreigners have been obliged to face a lamentable state of things in Mengtsz, most fortunately without encountering the evil consequences one would have expected to follow.

In 1893, if the unhealthy conditions of the Assistants' premises could not be remedied, at least every possible improvement was made in the main house. These hygienic measures, well

executed, and aided by frequent disinfection of the floors and court-yards with lime water or a solution of bichloride of mercury, prevented, perhaps, that year the intrusion into our premises of the prevailing disease when it was raging at our doors.

The French Consulate, which since its inauguration in Mengtsz has occupied a yamên near that of the Customs and in a like unsatisfactory state, moved in August 1893 into new buildings situated outside the town, under improved hygienic conditions. New quarters, conterminous with the new French Consulate, are now being erected for the Customs staff, and are expected to be ready for occupation by June 1894.

It is certainly not to the excellence of their food that the exceptional good health enjoyed by foreigners in Mengtsz should be attributed. The want of beef and mutton is much felt by them, cattle and sheep being but seldom slaughtered, in spite of a good many Mahommedans residing in the town. The only animal meat used is pork, alternated with chicken, fish and game. Vegetables are plentiful in the market, although but few enter into the diet of foreigners. Far from being scarce, cattle and sheep are so exceedingly common and cheap in Yunnan that people from Tonkin come up for supplies; but difficulties, such as the absence of a butcher and of a slaughtering-place, have up to the present prevented all attempts at regular slaughtering from succeeding.

No kind of milk is obtainable in Mengtsz.

Riding and shooting are the chief amusements indulged in by foreigners. The practicability of the roads during winter and spring, and the genial climate then prevailing, render riding easy and agreeable, while people fond of more fatiguing exercise find plenty of shooting, game abounding on all sides.

During the five years commencing with the arrival of foreigners at Mengtsz the community numbered, on an average, eight members. No case of serious illness specially due to climatic conditions occurred among them, in spite, as already said, of the most defective sanitation. We must notice, however, a peculiar state of sleeplessness to which most of the foreigners residing in Yunnan, as well as many Chinese who are strangers to the province, are subject. This malaise has been felt by foreigners during their whole sojourn at Mengtsz. Some Cantonese complained to us of the same uneasiness, never experienced by them elsewhere in China. Akin to this physiological disturbance, a difficulty of breathing may be noted, occurring sometimes in new-comers for the first few days after their arrival in the highlands. Undoubtedly this last symptom belongs to "mountain sickness." As said by CORRE,* "On high lands there is a diminution of the oxygen of the atmosphere, while increased digestion and muscular straining, associated with a lowered temperature, go far to hasten the exhalation of carbonic acid; so the lungs have to work with more activity and amplitude in order to make up for their want of respiratory nutriment." Hence a difficulty in breathing, chiefly noticed in new-comers, expressing but a momentary want of adaptation.

Perhaps some connexion may also be found between the diminution of the atmospheric oxygen and the sleeplessness just alluded to. It, too, may be due to a protracted failure of adaptation.

* *Traité des Maladies typhiques*, p. 556.

We shall enlarge later on upon the curious immunity enjoyed by foreigners against the terrible plague so deadly to the natives. During the year ended in April 1894, the first of our stay in Mengtsz, the only affections observed and treated among foreigners consisted of a case of malarial anæmia, accompanied by chronic enlargement of the spleen, and a case of remittent malarial fever.

Masked fits of ague, absence of variety in food, want of a generous diet, and chiefly the fatigues of a long sojourn under the most unsatisfactory conditions of comfort, already mentioned, had brought about, in the first case, a rather alarming state of anæmia, which, however, hydrotherapy and bark improved speedily.

The case of remittent fever lasted for 10 days without any remarkable symptoms other than high fever, with variable remissions, controlled successfully by large doses of quinine.

But few pathological cases have been observed and treated among the Chinese population, and there is confessedly no prospect of the number increasing for years to come, as we have but little hope of winning the confidence of the natives or of conquering the feeling of shyness entertained towards us. Moreover, the lack of any suitable conditions for the practise of foreign medicine may have hitherto deterred patients from seeking foreign advice, while from the same cause we have not been prepared to welcome them. Not only have we no dispensary or consulting-room for receiving and attending our occasional patients, for preparing medicines and making examinations, but medicines and surgical instruments are, for want of room, accumulating in cupboards among jars of comestibles. Another discouraging drawback is the lack of an attendant able to understand us and to aid in performing the minute details of our work. All these different causes account for the very small number of cases related in our notes on the plague.

Among surgical cases we have nothing to mention but some burns and slight wounds.

Affections of the eye are very common in Yunnan, mostly due to granular infection. Unquestionably, in many cases, by applying for medical aid, incurable infirmities could be warded off and the large number of blind people reduced; but, unfortunately, the reliance of this ignorant population on foreign medicine is but fragile. Out of a few cases of granular conjunctivitis which came under treatment, some very severe, at an advanced stage of the affection (almost total opacity of the cornea), only one patient could be induced to undergo the prolonged and painful course of treatment commenced, which at last proved quite beneficial. At the end of a week the confidence of our other patients gave way and they did not return.

Most of the medical cases observed belonged to the class of infectious diseases.

We had, however, two cases of pulmonary tuberculosis, rather an infrequent occurrence in climates of altitude, according to the researches of the last 30 years.

Suicide by opium is rather common at Mengtsz. We heard of at least 10 attempts of that nature throughout the year.

In three instances our aid was sought and, fortunately, proved successful. The treatment employed was that usual in such cases, emetics and general stimulation. In the last case, which was the worst of all, as the patient after swallowing several mace of prepared opium got drunk with samshu (Chinese alcohol), recourse to Faucher's tube was necessary in order to wash out the stomach, which no longer reacted under the repeated administration of emetics. The patient, who was quite unconscious and comatose, received

about 10 pints of cold water, which, in the long run, brought out pieces of opium which had been sticking to the stomach walls. After 24 hours of torpor he was restored to his normal state.

Leprosy is not rare in Yunnan; but we do not think its frequency there is greater than in other parts of China. Although small-pox makes its appearance intermittently in Mengtsz, no case has hitherto fallen under our observation. Vaccination is not practised in Yunnan; its extension, so great nowadays over the rest of China, has not yet reached this remote province. We cannot but feel sorry to have been unable up to the present to inaugurate anything in that line. Vaccine tubes, which we had kindly been provided with by our comrade CALMETTE, Director of the Bacteriological Institute at Saigon, when passing through that city on our way up to Mengtsz, remained unused on account of the indifference with which our disinterested proposals of vaccination were received. We were afforded no facilities for inoculating a young calf or buffalo with the vaccine lymph, which preliminary precaution it was advisable to take in order to renew the virulence of the lymph, somewhat exhausted by our protracted journey. Consequently, no further attempt has been made.

We have been told by natives that cholera is not unknown in Yunnan, but we have not been able to obtain any precise information on the subject.

As to other infectious diseases, all the different types of malarial fever are frequently encountered here, namely, intermittent, remittent, typho-malarial, etc. No doubt this last form of malarial fever and *chang-ch'i* (瘴氣), or *Man-tu* (蠻毒), are identical. In all cases quinine proved effectual, which is the best guarantee of the correctness of our diagnosis.

At last we arrive at the description of the most interesting disease prevailing in Yunnan—the plague, or *yang-tzŭ-ping*, as it is called by natives.

THE PLAGUE.

Every year during the last 35, at variable epochs for different points of the province, but regular for a determined point, an epidemic disease occurs in Yunnan called by the natives *yang-tzŭ-ping* (痒子病), that is to say, "bubo disease," because it is characterised by the almost constant appearance of one bubo or several somewhere on the patient's body.

The history of this disease in Yunnan is extremely obscure, and the information given by Chinese is contradictory. Some people believe it took its rise in Western Yunnan at the time of the Mahommedan Rebellion, conspicuous for so many massacres and attended by so many miseries. Others think it came at that moment from Western countries through Thibet or Burma. Another vague assertion is that of a French missionary, who spoke to us of his having read, in the itineraries of Jesuits sent by the Emperor K'ANG HSI to survey the province in 1617, the description of a disease quite similar in its symptoms to the *yang-tzŭ-ping* observed nowadays. All these statements go far to shroud in mystery the question of the origin of *yang-tzŭ-ping*. It is difficult to believe in the local origin of this disease. Too many proofs of past prosperity abound in Yunnan, incompatible with the conditions of misery necessary to the development of such an infectious germ as that of the *yang-tzŭ-ping*, and therefore

contradictory of any belief in the early existence and permanency of an epidemic the consequences of which are fatal to the welfare and fortune of a country.

The proximity of India, so frequently visited by *máhámari*, which has been long recognised as identical with Plague (GRIESINGER), can perhaps help us towards a solution. At various intervals since 1699 epidemics of *máhámari* have been recorded in the mountainous provinces of Western India. In 1834 and 1836 the disease reached the highlands of the Kumaon district, in the north-west of India. In 1849, 1852 and 1859–60 we again find the disease raging in that district. On these occasions the outbreak of the epidemic was preceded by great mortality among rats, jackals, snakes and other animals.* The Kumaon district is contiguous to Western Thibet, and though the distance which separates Yunnan from Kumaon is not less than 1,500 miles (WELLS WILLIAMS), strong reasons can be adduced in favour of the Kumaon plague having been propagated to Yunnan through Thibet. Notwithstanding their great uncertainty, the fragments of information gathered from natives are found to agree on two points, namely, the approximate date of the appearance of the disease in Yunnan, which they represent as contemporaneous with the beginning of the Mahommedan revolt in 1860, and the fact of its having come from the west of the province. If, then, we compare the date of the first appearance of the plague in Yunnan with that of the outbreak of *máhámari* in Kumaon in 1859, at the same time bearing in mind the considerable trade carried on between Western Yunnan and Anterior Thibet by numerous Thibetan caravans coming over to take part in the great annual fair of Tali-fu, the capital of Western Yunnan, the former hotbed of the Mahommedan Rebellion, we may conclude, without being taxed with precipitation, that very likely the Yunnanese *yang-tzŭ-ping* is nothing else but the Indian *máhámari*, propagated by means of caravans all along the highlands of the southern frontier of Thibet up to the western borders of Chinese Yunnan. Eminent epidemiologists have already compared these diseases, and have observed this noteworthy peculiarity, common to both, namely, the great mortality prevailing among some animals on the eve of each outbreak.†

The march of *yang-tzŭ-ping* in China is most interesting. At various intervals epidemic visitations occurred in Kweichow, Kwangsi and Kwangtung, sometimes reaching Pakhoi, where the disease is locally known as *li-tzŭ-chéng* (疊子症).‡ It is easy to trace the *yang-tzŭ-ping* on all these sides. In 1893, after having committed its usual ravages in Yunnan, the disease extended towards the south-east, and two months after its visit to Mengtsz we heard of its raging at Lungchow and in many towns of the Kwangsi province. The commercial intercourse of Yunnan with Kwangsi is incessant. Every day thousands of peddlers and numerous caravans of horses and mules are plying on the roads of the two provinces, evidencing the importance of the traffic existing between them—probable agents, too, of the propagation of such a contagious disease as the plague. It is worth noting that the disease does not remain permanently in the low regions of Kwangsi and Kwangtung. The variability of its appearance in these places seems to point to a newly-imported contagium whenever the plague breaks out. One would think, in short, that in the low-lying regions the micro-organism of the plague does not

* Surgeon General GORDON, *Epitome of Chinese Customs Medical Reports*, p. 377.

† Surgeon General FRANCIS, quoted from Surgeon General GORDON's *Epitome of Chinese Customs Medical Reports*, p. 379.

‡ Customs *Medical Reports*, xxxviii and xxxix, 15.

find the conditions necessary to its vigour. On the Yunnanese highlands, on the contrary, if the disease is not perennial, it shows at least great regularity in its annual revival.

Undoubtedly the filthy habits of the Yunnanese are highly objectionable,—the defective sanitation of Mengtsz has already been described; but those unhealthy conditions prevail extensively all over China, as well in low-lying districts as on highlands. *Yang-tzŭ-ping*, in spite of its frequent visits to Kwangsi and Kwangtung, never succeeded in acclimatising itself there. So in Mexico, typhus, which is endemo-epidemic in the highlands, is comparatively very rare in the low-lying lands.*

We are thus led to assume either a susceptibility to typhous affections peculiar to the inhabitants of highlands, or some special influence due to the altitude of the same regions, hitherto undefined, but obviously favouring the vitality, reproduction and multiplication of any typhous germs, whether those of the highland typhus or those of the Yunnanese *yang-tzŭ-ping*.

The first theory has been defended by JOURDANET and CORRE with regard to the Mexican typhus.

On the highlands, says JOURDANET, the diminution of atmospheric pressure, the greater dilatability of air, its lessened richness in oxygen, its excessive dryness during several months of the year, the ardour of the sun's rays intensely heating the body in the daytime, and the extreme cooling brought about by the nocturnal radiation across a cloudless sky—all these causes involve a reduction of the hæmatosis, a general impairment of every function, when the most powerful reparative assimilation is required to restore an organism exhausted by its incessant losses due to evaporation and radiation. The consequence is that adynamia is somehow the characteristic of the physiological and pathological states observed in the inhabitants of high countries. It is in that climatic influence, which prostrates the strength and effects that blood deterioration particular to typhoid affections, that the cause of typhus is to be looked for.

The same reasoning could be applied to the development of bubonic typhus in Yunnan, considering the remarkable analogy existing between the climate of Yunnan and that of the Mexican highlands.

We feel, however, rather inclined to attach more importance to a special influence due to altitude, irrespective of the individual physiological conditions of the inhabitants of highlands.

When investigating the specific cause of such a disease as Plague, which, as GRIESINGER says, very likely finds in decomposing bodies its elements of development or of protracted existence, we would first point out the momentous significance which ought to be attached to the diminution of oxygen on highlands. We know, indeed, that the destruction of pathogenic germs is carried out by saprophytes, by the action of light or of a drying process, and chiefly also by oxygenation. It is in helping nitrification that the action of oxygen proves effectual; the more oxygen there is in the atmosphere, the more speedily the stage of putrefaction is gone through; its diminution delays the nitrifying process and gives rise to a process of reduction, due to the organisms of putrefaction. So it may be supposed that the specific plague germs find in that diminution the conditions most favourable to their development, especially when, in addition to this circumstance, the first heavy rainfalls of summer deluge the compact clayey soil of these regions, which, being well-nigh impermeable to water, becomes, when once deluged,

* CORRE, *Mal. Inf.*, p. 556.

impenetrable to the air. Hence a slackening in the oxidising processes, and, instead of the beneficial nitrification, an incomplete combustion of the organic matter is effected only by the germs of putrefaction. Thus, probably, a favourable medium is constituted in the decomposing bodies of men and animals dead of plague, or in any organic matter which once contained plague germs. Germs which were dormant and inactive on account of the want of favourable conditions then develope and multiply under the new influence, waiting only for contact with living beings to exhibit their destroying power.

It is already long since the production of epidemics was attributed to want of ozone in the atmosphere. Great epidemics, it has been said, have often been marked by an almost total disappearance of ozone. Although based on merely coincident facts, it seems that this deduction gives support to the preceding theory, since we stated in the beginning of this Report that the quantity of ozone on the Yunnan highlands cannot but be small.

We have already adverted to the vegetation, which is very scarce all over Yunnan and does not exist at all over the immense cemeteries of the country. This condition is extremely hostile to the purification of a soil infected during many years by the interment of millions of corpses of men and carcases of animals dead of plague. Although not a direct factor in the destruction of pathogenic germs, vegetation is most useful in purifying the soil. The roots facilitate the penetration of the soil by air; the filtration of subterranean water is effected by absorption by the roots of plants and evaporation from their leaves. We know, besides, that the more compact and clayey a region is, such as that of Mengtsz, the more vegetation it requires in order to become a real purifying ground. The small roots tend to aerate it, and the soil-fluids being constantly evaporated less resistance is encountered by impure water in sinking into the earth.

From a prophylactic point of view an important practical deduction could be drawn from these last considerations, were it not certain that any attempt at improving the actual state of things is useless. That deduction is the necessity of planting the Yunnan cemeteries, with a view to their purification and disinfection.

The specific germ of the Yunnan plague is undoubtedly to be looked for in the superficial layers of the ground. The singular propagation of the disease among animals furnishes a strong argument in favour of this affirmation. In reference to the latter fact, Mgr. FENOUIL, Bishop of Yunnan, who has lived for more than 40 years in the country, kindly gave us the following information:—

> In the plains visited by *yang-tzŭ-ping* the first victim is invariably the rat, whose snout is always close to the earth; in succession and regular order the pig, cat, dog and ox, and, finally, man, whose mouth is most distant from the soil, are afterwards attacked. In places where epidemic visitations are frequent, as soon as the inhabitants see rats emerging from holes in dwellings in full daylight, jumping up and turning round without showing the least fear of their ordinary foes, everybody prepares to make for higher lands.

Although what we have already written points chiefly to infection through the digestive or respiratory organs, we have grounds for thinking that in many cases infection takes place through the altered integuments. Among some cases observed during the last epidemic we could twice clearly trace the origin of infection to a small scratch on the foot, for as early as the 1st day of the disease a pustule was seen on such a spot. Agonising pain in the calf

and thigh on the affected side speedily followed, attended almost at the same time by a large inguinal bubo. Inguinal bubo is reported by Chinese as being by far the most invariable symptom of plague. May we not attribute this prevalence to the habit of walking barefoot, which involves the frequent occurrence of small scratches on the feet or legs, very slight superficial excoriations never cared for, unheeded fissures ready to be penetrated by morbific germs residing in the soil? The great number of cases would thus be accounted for.

The mode by which infection invades the organism is thus, in our opinion, rather uniform, as we assume direct penetration of the pathogenic germs into the blood. We must also take count of the total want of personal hygiene, and the extremely filthy and objectionable habits of the natives, as well as their dirtily prepared food.

In a case which came under our observation a submaxillary adenitis appeared as early as the 2nd day of the disease. The patient, an Annamite, used constantly to chew some of those strong spices (pimento) which produce an almost caustic action on the mucous membranes. We are inclined to suppose a direct inoculation through the inflamed buccal mucous membrane in this case, which was remarkable for the precocity and intensity of the cerebral phenomena and the presence of a solitary submaxillary bubo. May we not, moreover, look upon the scrupulous cleanliness of foreigners, their well-protected integuments, and their carefully prepared food as so many causes effective in diminishing the chances of inoculation? The curious immunity from *yang-tzŭ-ping* hitherto enjoyed by them might thereby be explained.

As regards the plague, local infection has up to the present been considered exceptional (GRIESINGER). But who knows whether, as has been the case with charbon, the infection of the plague may not some day be traced in every case to an inoculation, a direct penetration of the specific germs through a crack on the skin, a sore or wound, however slight, however hidden it may be, on an internal mucous membrane? The original excoriation which the pathogenic micro-organism uses for its entrance into the body may be somewhere on the mucous membrane of the digestive or respiratory tract. The most obscure cases, wherein no external adenitis appears, might in this way be cleared up.

At Mengtsz every year the first few cases of plague begin regularly about the period of rice planting, that is to say, in May. In March and April, a month or two before the outbreak of the epidemic, the troughs which constitute the ordinary latrines are in every dwelling emptied and cleaned. Their contents are allowed to accumulate for weeks outside the houses, in the street, until they are disposed of to the farmer and carried to the rice fields. May, too, is the first month of oppressive heat and occasional heavy rains. The result of these simultaneously occurring events, as they highly favour fermentative and putrefactive processes, is to give rise to an immoderate development of most malodorous gases. As mentioned above, perhaps a month or two previous to people being attacked by the disease, the rats first and the pigs afterwards begin to perish. The epidemic in Mengtsz starts invariably from the west quarter, contiguous to the cemetery, and notwithstanding the occasional occurrence of cases in remote and far apart corners of the city, it is apparent that the disease spreads from that quarter, visiting successively house after house. The west part is, according to natives, by far the most affected, and there is no doubt that the proximity of the cemetery and the compulsory removal

of the bodies of persons dead from plague through the west gate are among the main causes of the graver ravages of the disease in that quarter. On either side of that gate we remember to have seen in 1893 rows of human bodies leaning against the city wall, some still moving, others already stiffened by death—people dying or dead from the plague. It is a custom of the Yunnanese for parents or relatives to remove patients in a hopeless state from their homes and even from the town and to let them die in the open air, as the superstitious Chinese fear that in case of death occurring in a house the soul of the deceased may refuse to accompany the body and remain to haunt the premises.

As soon as the disease breaks out many well-to-do Chinamen desert their homes and make for distant places situated at a more considerable altitude, remaining absent during the entire period of its prevalence. They are, unfortunately, thus often the means of spreading the epidemic.

We have reason to believe that the water of Mengtsz has nothing to do with the causation of *yang-tzŭ-ping*. The depth of the wells and the good quality of the water have already been spoken of. We mentioned, too, the facts that while the Chinese drink only water that has been boiled, foreigners, on the contrary, consume it in its natural state, imperfectly filtered, yet that none of them in Mengtsz has ever been affected by the disease.

Instances are, however, recorded of foreign missionaries having been attacked by *yang-tzŭ-ping*. This only confirms our views about the causes of the immunity enjoyed by foreigners, as the obligations of the missionary's life are hardly compatible with strict hygiene, and impose on him continual intimate intercourse with the natives.

The Chinese do not admit of any immunity connected with special occupations, as was the case with water-carriers, oil merchants, etc., in the old epidemics of the plague in Europe. It may be sheer want of observation. But the immunity enjoyed in subsequent epidemics by people once affected is a well-established fact.

We said that the epidemic appeared contemporaneously with the first rains and heat, in May. As a rule, it does not last more than three or four months. In May a few cases occur. In June the disease reaches its fastigium: 20 to 30 deaths are daily recorded. In July the epidemic begins to subside, its daily victims numbering only from 10 to 20. In August the decrease continues. In September scattered cases are met with, the latest running a mild course and being easily rescued. From September the disappearance of *yang-tzŭ-ping* is complete; and until May of the next year the disease is not heard of except in extremely rare instances. The greatest intensity is displayed by the epidemic during the hottest month, June (but even then the average temperature does not exceed 74° F.). As the rainfall becomes more abundant the epidemic decreases, and disappears when at last the parched soil is clothed in vegetation and the crops in the cultivated fields are full grown. Its cessation precedes by a month the advent of malarial fevers, proving thereby that vegetable decomposing matter, which at this time accumulates in the fields after the harvests, has no share in the generation of *yang-tzŭ-ping*.

In Northern Yunnan, at Yunnan-fu, the disease prevails chiefly in winter, but has lost nowadays its previous gravity. We are unable to explain this difference in the dates of appearance of *yang-tzŭ-ping* in the north and south. The climate differs essentially in these

two parts of the province. At Mengtsz the disease arises on the spot every year, whence, after penetrating every corner of the city, it overspreads the whole plain, not sparing any village or hamlet, and frequently extending to Kwangsi. It has never yet reached Tonkin, although Mengtsz is but five days' journey from Laokai, the first French town on the Chinese frontier. Manhao, the first port on the Red River, half-way between Laokai and Mengtsz and separated by only 40 miles from each, with which, moreover, it is in daily communication, is only exceptionally visited by *yang-tzŭ-ping;* yet the cases recorded are said to have been imported from Mengtsz. Manhao lies some 3,600 feet lower than Mengtsz; although free from *yang-tzŭ-ping*, it has a very bad name, owing to the prevalence there of the so-called mountain fever. The muleteers from Mengtsz, as a rule, refuse to spend the night in that low-lying place, camp out on the mountains, and come down to the little town only in daytime to load their beasts. Nothing could prove better the influence of altitude on the development of *yang-tzŭ-ping* than the immunity of that small place.

Notwithstanding the considerable trade between Mengtsz and Laokai, there are but few travellers to be found on the way, the Chinese being forbidden to enter Tonkin without a regular passport. All the traffic is carried on from hand to hand. Goods circulating between Mengtsz and Laokai are transferred by muleteers to the crews of mercantile junks, discharged at Laokai, to be afterwards passed on to the crews of other boats.

We have no means of accurately determining the period of incubation of *yang-tzŭ-ping.* We can only guess that the average incubation period must be, as a rule, extremely short, from the fact that travellers coming from non-infected districts have been seized by the disease immediately on arriving at a contaminated place.

Yang-tzŭ-ping is essentially an infectious disease; that is its first character. Secondly, it is contagious, as proved by numerous instances of the disease being spread through the medium of travellers or fugitives, and also by the mode of its propagation, as above described, in Mengtsz, as well as by the heavy mortality befalling some families in consequence of the over-crowded, promiscuous conditions of their existence.

As to the modes of contagion, we believe that contact, direct or indirect, with a patient affected with *yang-tzŭ-ping* is necessary for the transmission of the disease. Air, even confined air, is no vehicle for the infectious germs. Experiment has demonstrated the infectiveness of the pus of the buboes, but it has not been ascertained whether other products or excreta of the patient contain the contagium.

Before beginning the following incomplete description of the symptoms of *yang-tzŭ-ping,* some explanations may be offered, in order to justify us in asking the indulgence of our readers. In the first place, we must confess that very few cases came under our observation, and that therefore our account is largely based on information gathered from native practitioners and from Chinese treatises. In the next place, serious clinical study was impracticable in the absence of a laboratory and of the necessary appliances for the examination of urine and blood. We had, moreover, no interpreter, indispensable to translate technical questions properly. And, finally, postmortem examination, formally opposed by Chinese laws, was impossible.

No prodromal stage, as a rule, marks the invasion of the organism by the infective germ. The first morbid manifestations are extremely sudden. Yesterday in full health and vigour, the subject feels to-day all at once terribly ill. The prostration is immediate and profound; or, in other cases, the patient is suddenly and wildly excited. Without apparent reason, he becomes delirious. He cannot stand on his legs. He is hardly able to complain of the violent pains which rack all his body but chiefly his head and back.

The temperature is very high, 102°, 104° or 106° F.; the heart tumultuous; the pulse rapid, irregular, beating 180 or 200; respiration is hurried, panting. The tongue is whitish, sometimes black. Vomiting is very common. Constipation exists as a rule; exceptionally a momentary diarrhœa occurs, with fetid, black stools. The urine is scanty and loaded.

After 24 or 36 hours these initial symptoms are aggravated. Depression increases or delirium becomes maniacal. The patient seems to suffer excessively. In one case suicidal attempts were obstinately made from the beginning. The features are soon so altered that after 24 hours a patient can hardly be recognised. The sunken eyes stare in the most inexpressive way, with dilated pupils. At other times the features denote deep distress. The conjunctivæ are injected in the corners, the ocular mucous membrane remaining dry. The skin is dry and pungent, sometimes parchment-like. Every system seems to be intensely affected.

The fever goes on unremittingly for the first two or three days. Irregularity of the heart points to profound blood deterioration, which in some cases is manifested at the end of a few days by the appearance of a petechial exanthem.

In the cases which came under our notice auscultation did not reveal any serious disturbance in the respiratory functions, beyond a notable acceleration in breathing. Nevertheless, native practitioners speak of hæmoptysis, occurring sometimes as early as the 3rd or 4th day, which would indicate a severe pulmonary complication.

Hiccough sets in very soon. Vomiting does not persist beyond the first few days, but frequently the stomach shows an unconquerable intolerance for everything introduced into it throughout the disease. Constipation persists or speedily replaces the diarrhœa, which in rare cases is at first present. There is usually slight tumefaction appreciable both in the hepatic and splenic regions, though pressure does not indicate any increased sensibility. The urine is scanty, almost red, often entirely suppressed.

As early as the 1st day, oftener on the 2nd or 3rd, at variable points over the patient's body—behind the ears, under the jaws, in the armpits, but most frequently in the groins,—a tumour appears, including one gland or several. The development of this bubo is extremely rapid. After two or three days its size may be that of a hen's egg. *Rubor, calor, dolor,* these three great classical signs of inflammation, attend the tumour.

In two cases we observed the appearance of the inguinal bubo as early as the 1st and 2nd day of the disease respectively. Both patients presented a small scratch on one foot, attended by lymphangitic tracks along the leg and thigh. After a few days the inflamed glandular swelling became enormous, the deep glands participating in the enlargement, as was proved by palpation.

Adenitis is not always discoverable in *yang-tzŭ-ping*. We regret that no postmortem research was possible, in order to determine whether internal glandular tumours may not exist where external tumours are absent.

We mentioned the fact of the early appearance in some cases of a petechial exanthem. No such cases having come under our observation, we must trust to information derived from natives. The eruption consists of slightly elevated (?) red spots as large as a millet seed, discretely and irregularly disseminated on the back, chest, arms, thighs and legs, and frequently turning black. As some of these characters do not apply to petechiæ, the eruption referred to may occasionally be simply erythematous. Carbuncles are not infrequently observed. We had only one opportunity of meeting with a well-characterised carbuncle developed on a scratch of the foot (Case I). About the 3rd day of the disease there generally occurs an unexpected remission of the fever, a sudden abating of every grave symptom. The patient seems to revive and entertains the most sanguine ideas about his condition. Every depressing nervous symptom vanishes for a while. The circulation and respiration are not so tumultuous; the digestive organs not so intolerant. Even the skin is often bathed in sweat. We recall the case of a servant in the French Consulate at Mengtsz, who, on the day of this remission, left his bed, walked a few paces from his room into the open air, swallowed several bowls of rice, and on the following day was found dead at the door of the Consulate.

Death may occur before the remission just described, due, in some cases, to a kind of sideration (?) of the nervous centres, brought about by the excessive temperature or the direct blood-poisoning; in others, to premature heart failure, resulting from a direct intense action of the poison on that organ. As a rule, however, death is posterior to that remission, which usually lasts hardly more than one day.

The grave situation before described, and so well masked during the remission, is again suddenly betrayed after some 24 hours. Delirium, if not yet existing, commences, or it becomes more and more violent, soon followed by a period of coma ending fatally. At other times hyperpyrexia recurs and speedily exhausts the patient. Protracted cases may also be observed lingering in a septicæmic state, attended by hæmorrhagic transformation of the petechiæ, and due perhaps to the absorption of the bubonic pus. These always end fatally.

Hæmoptysis is considered by the Chinese as a sign of early death, the unavoidable consequence of a probable pulmonary gangrene. If on the 10th day the patient is still alive, he is generally looked upon as safe.

When recovery takes place the buboes are absorbed or suppurate spontaneously, as the Chinese seldom use the lancet. The typhoid state, sordes on the tongue, prostration, stupor or delirium, etc., vanish slowly. The brain clears at the same time as the digestive functions become regular, and the kidneys begin again to work. These cases of recovery are chiefly observed at the end of epidemics, the disease at that time, according to natives, running a much milder course.

It is not necessary to describe benign forms of *yang-tzŭ-ping*, as we had no opportunity of observing any. There cannot be many such cases in a disease which kills, on an average,

nine out of ten people affected by it, unless cases of recovery occurring at the end of epidemics may be looked upon as belonging to that category.

We shall not attempt to enumerate the many and various complications which attend the disease, as the information about them given by natives is strangely mixed with fanciful theories of disease, but prefer to content ourselves with the incomplete description just given, which, even if full of gaps, is at all events accurate.

Death may occur after 24 or 36 hours, which is no rare occurrence at the beginning of an epidemic. Generally the patients succumb on the 4th or 5th day. But it very often happens that death is the consequence of some complication after the first 10 days.

Convalescence sets in usually after the 8th or 10th day, but is indefinitely protracted. Sometimes two or three months elapse before recovery can be said to be complete. A patient of ours, the only one who recovered, remained in a state of mental dulness approaching imbecility for nearly two months after his convalescence.

We cannot say anything about the sequelæ of *yang-tzŭ-ping*, as we have not sufficient personal experience of them.

Relapse is said to be frequent.

Recurrence is extremely rare, which fact is well known by natives, who, once attacked, believe implicitly in their future immunity.

Prognosis is exceedingly grave. At the beginning of an epidemic the mortality is said to be 90 per cent. Towards the end the chances of recovery increase. Children and old people invariably succumb. Only young men with strong constitutions are able to go through such a formidable disease and survive. According to the Chinese, several buboes are a better omen than a solitary one. Premature sweats are of very bad augury; also the appearance of petechiæ from the first.

The natives say that the epidemic of 1893, which lasted for three months (June, July and August), was not particularly severe in Mengtsz. However, out of an estimated population of 10,000 or 12,000, 1,000 people died. Carried outside the dwellings, the victims of plague lay dead or dying unheeded in the streets or set in rows leaning against the city wall. We saw on some roads dogs and pigs feeding undisturbed on corpses which no one cared to bury. These animals fell victims to their voracity and succumbed to the scourge.

In some places whole families disappear. At the beginning of the last epidemic we were called to the young son of the Chên-t'ai (Chinese general) of Mengtsz. The poor boy had just been given over by the native doctors, who, probably from fear of displeasing the father, would not declare the nature of the disease. As we were aware of a case of *yang-tzŭ-ping* having already occurred in the Chên-t'ai's yamên; considering, too, the rapid evolution and extreme gravity of every symptom exhibited by the little patient; disregarding at the same time the hypothesis of a heat-stroke or pernicious intermittent fever—we had no hesitation, in spite of the absence of any external adenitis (and to the great displeasure of the father) in diagnosing *yang-tzŭ-ping*. Although ready to do our best, we insisted on the probable failure of any treatment, and urged the necessity for immediate and energetic disinfection, in order to ward off further diffusion of the disease.

The boy died shortly afterwards. None of the measures advised were taken, because the native quacks denied the accuracy of the diagnosis. Doubtless the failure of our treatment had discounted the value of our advice. However that may be, the Chên-t'ai, an old warrior, who had spent his whole life in Yunnan and had passed unscathed through all the previous epidemics which decimated the country, was, a few days after the death of his son, attacked by *yang-tzŭ-ping*, and speedily perished. Some of his wives, many of his relatives and servants were in succession attacked, all the cases ending fatally. The people that died from *yang-tzŭ-ping* in that yamên before the end of the epidemic numbered at least 25.

The early epidemics were, according to Mgr. FENOUIL, far more virulent and deadly than the later.

At the time when *yang-tzŭ-ping* raged most severely in Yunnan-fu, writes Mgr. FENOUIL, from 1,200 to 1,500 coffins passed daily through the six gates of our city. No one that I am aware of ever tried to determine the number of victims in the whole province. In 1866 people in a position to be well informed assured me that both in Yunnan-fu and the plain which surrounds the town there remained no more than a fifth of the former population. It must, however, be remembered that the Mahommedan war, commenced in 1856, had contributed a good deal towards increasing that immense mortality. . . . . The enormous figure of 1,500 deaths per day occurred seldom; the average amounted to 600 or 800 daily victims.

After this description we do not think that the question of diagnosis admits of much discussion.

The Yunnan *yang-tzŭ-ping* appears unmistakeably to be the bubonic plague, with all its formidable symptoms—the ancient Western scourge which in past centuries ravaged the whole of Europe.

The hypothesis of a malignant form of typhus with rapid evolution cannot be sustained. In *yang-tzŭ-ping* buboes are extremely frequent, if not constant. They are seen but very seldom in any form of typhus. On the other hand, while the appearance of an exanthem, erythematous or petechial, is the rule in typhus, it is the exception in *yang-tzŭ-ping*.

There is a certain resemblance between the invasion period of many cases of *yang-tzŭ-ping* and that of malignant pustule. Thus we note an initial elevated pustule on which a carbuncle soon developes, and the suddenness of general symptoms of extreme gravity. But in malignant pustule there is neither lymphangitis nor adenitis, which are nearly constant in *yang-tzŭ-ping*. Besides, the characters of the pustule are not the same. The well-known ring of vesicles encircling malignant pustule is absent in *yang-tzŭ-ping*. We never heard, moreover, of malignant pustule becoming epidemic to the same degree as *yang-tzŭ-ping*. No other differential diagnosis is worth discussing.

As already explained, no postmortems being obtainable, the morbid anatomy of the disease must necessarily remain a blank.

We shall not enlarge upon the various modes of treatment employed, which all proved of no use, except perhaps in one case.

Refrigeration (cold baths or wrapping up in a wet sheet) was resorted to, to combat hyperpyrexia and diminish cerebral excitement.

Champagne was ordered with profusion in a case where prostration was the dominant symptom.

We tried to meet the obstinate constipation of the beginning by the administration of saline or oily purgatives.

Diaphoretics and diuretics were employed to facilitate the working of the heart and kidneys when these organs seemed to be hampered in their functions.

As local treatment, we once incised a bubo (Case I); but there is seldom any indication for cutting, as the patient generally dies before fluctuation or softening of the tumour is apparent.

The only attempt to go beyond a merely symptomatic medication consisted in the subcutaneous injection of carbolic acid, 8 grains per day, intended to combat the blood-poisoning. We used it in only two cases, of which one recovered; so no definite result was obtained.

Among the most valuable items of information supplied by Mgr. FENOUIL, we have to record the marvellous cures he effected on people ill with plague by the use of potasso-tartrate of antimony in very large doses. He goes so far as to affirm that he never lost any patient treated in that way. The next epidemic will afford plenty of opportunities to put this observation to the test.

We have already alluded to the impossibility of altering the insanitary conditions in this region.

Isolation of patients attacked by contagious diseases; their removal to spacious shelters; cleanliness, disinfection and aeration of these places—these are measures that the Chinese will never approve of, as they do not comprehend them. Their faith in foreign treatment shows itself only in the swallowing of drugs; and even then the nature of these drugs must not be in contradiction with their theories of diseases. For instance, they are unwilling to accept treatment by alcohol or refrigeration. We have already insisted on the inestimable effects which would follow the planting of trees and the cultivation of useful plants, such as *Eucalyptus globulus*, over the extensive cemeteries of Mengtsz, with a view to the purification and disinfection of the ground.

Without dwelling on the hygienic measures adopted in every civilised country, but the execution of which is impossible in China, we wish, before terminating this Report, to propose a mode of prophylaxis which, were it enforced upon all, would certainly prove most effectual in Mengtsz.

Lime is an extremely cheap and abundant product of this country. Its powerful antiseptic properties are taken advantage of everywhere else for disinfecting purposes. Nothing could be more feasible here, provided the local authorities were to intervene, than on the eve of an epidemic, as announced by the death of the rats, to enforce the whitewashing of every house in Mengtsz and the daily irrigation with lime water of every interior court-yard and every floor, these being mostly made of bricks or simply of earth.

As regards foreigners, we have no doubt that the secret of their immunity from the disease resides altogether in their rigorous personal hygiene. Frequent disinfection of foreign-occupied premises, by means of lime water or a solution of bichloride of mercury, was the only supplementary precaution which we advised.

We cannot but express wonder at the indifference hitherto shown by the Tonkin Government towards a disease which has already invaded South China up to Tonkin,

which every year devastates new countries, and which permanently menaces French Indo-China.

A medical commission would here find a large and splendid field for scientific investigation. Its work might prove of immense value, either by suggesting measures to be taken with a view to face the possible contingency of a propagation of the disease to Tonkin, or perhaps by discovering the means of stamping it out.

CASE I.—Annamite, aged 25; stout, strong fellow, recently arrived at Mengtsz from Tonkin. Lives in an extremely unhealthy house—damp, unventilated, wherein, moreover, a number of people died from plague in late years.

22nd July.—Intense malaise; vomiting after food; giddiness; strong fever. A very slight scratch on the right foot, hitherto unnoticed by the patient, has swollen, causing distressing itching. Pain in the right groin.

23rd July.—Condition when first seen (2nd day of the disease): severe headache and backache; general muscular pains; face anxious; no delirium; no mental disturbance; tongue loaded; anorexia; bowels constipated; pulse rapid, irregular, vibrating; heart tumultuous; temperature 105°; no cough; slightly hurried breathing; nothing discoverable in the chest; no enlargement or sensibility of the liver or spleen; very little urine, red in colour. A small umbilicated vesicle appears on the back of the right foot, exceedingly painful; all round the tissues are red, œdematous. Lymphangitic traces on the leg and thigh. In the inguinal region a bubo, already quite manifest, projects, palpation of which starts the patient crying. A purgative dose of sulphate of soda was administered, and 1.50 gramme of quinine prescribed for the evening. Belladonna and mercury ointment applied to the whole limb.

24th July.—Same state. Several large stools. Fever persists. Temperature: A.M., 104°.3; P.M., 105°.2. The vesicle on the foot is increasing and the œdematous inflamed zone extending. The bubo continues to enlarge. 1.50 gramme of quinine again. Aperient lemonade prescribed. Until now we had not diagnosed *yang-tzŭ-ping*, regarding the case as one of adenitis with severe general symptoms.

25th July.—Every symptom aggravated. Restlessness; sleeplessness; stupidity. The features begin to alter in an extraordinary manner. Every medicine is vomited. Constipation sets in again, in spite of aperients. Respiration hurried, panting. Pulse rapid, vibrating. Temperature: A.M., 105°; P.M., 105°.5. Slight hyperæsthesia of the hepatic region, the liver seeming to be enlarged as well as the spleen. The patient suffers excessively, though hardly able to complain. No eruption. Urine diminishing in quantity. The vesicle on the foot is now a flat pustule, as large as a 5-cent piece, on the border of which a black slough is forming. Some serum exudes when the surface is pressed. Œdematous inflammation extends all over the foot. Lymphangitis more pronounced. The bubo is enormous, but not fluctuating. Cinchona and alcohol. Wrapping in a wet bed-sheet for an hour and a half. 1 gramme sulphate of quinine; champagne.

26th July.—Remarkable remission in all the grave symptoms. Tongue almost moist. Better aspect. Pulse strong, not so rapid. Temperature: A.M., 100°.4; P.M., 101°.3. Breathing easier. Constipation continues; urine scanty. The pustule has obviously given place to a carbuncle. The outer pellicle sloughing off, shows a black surface. No ring of vesicles round the pustule. Slight fluctuation in the bubo. A large, deep, crucial incision was made into the carbuncle. About 15 grains of bichloride of mercury was introduced into the incision and spread over the slough. Interstitial injections of 10 per cent. tincture of iodine were made in the surrounding areolar tissue. Cinchona and alcohol; champagne. At night the wet sheet was reapplied, the temperature reaching 102°.

27th July.—All the bad symptoms have reappeared. Intermittent delirium; restlessness. The features have altered to such a degree as to make the patient unrecognisable. Intense thirst. Pulse strong. Temperature: A.M., 102°.1; P.M., 104°. Had one stool; urine scanty. Liver and spleen manifestly

enlarged and sensitive. Very distressing hiccough has set in. Foot quite insensible. Wet sheet for one hour. Champagne. Subcutaneous injections of carbolic acid in solution (0.50 gramme a day). Cinchona and alcohol.

28th July.—Patient constantly delirious. Pupils dilated but sensitive. Restlessness. Pulse depressible, small. Heart irregular. Temperature: A.M., 104°.2; P.M., 105°. Struggled with his nurse to get out of bed. Refused medicine. Hiccough persisting. The bubo is aspirated with a Pravaz needle, which draws off some pus mixed with blood. Wet bed-sheet applied three times to-day. Subcutaneous injections of carbolic acid.

29th July.—No fever this morning. Temperature 99°.3. Patient semi-conscious. Pulse soft, depressible. Heart irregular, feeble. Breathes with difficulty. Temperature, P.M., 103°.2. Constipation persists; no urine for two days. Bubo incised; very little pus is set free. The cavity of the bubo is washed out with a solution of bichloride of mercury and dressed with vaseline and iodoform. Wet sheet, preceded by injections of valerianate of cafein (0.20 gramme), on account of the cardiac weakness. Injection of carbolic acid (0.25 gramme). Cinchona and alcohol; champagne.

30th July.—Temperature: A.M., 100°.3; P.M., 101°.2. Great prostration. Pulse small, hardly felt. Sulphate of sparteïn (0.10 gramme) injected alternately with valerianate of cafein (0.40 gramme). In the evening pulse better; heart beating with more strength. The patient passed urine abundantly; no stools. No wrapping. Champagne; cinchona and alcohol. Injection of carbolic acid.

31st July.—Temperature: A.M., 100°.1; P.M., 102°. Great weakness; semi-consciousness. No stools; passed urine. Very little suppuration from the bubo. The carbuncle on the foot is now replaced by a large black slough, the borders of which are quite insensible. Valerianate of cafein injected (0.20 gramme); carbolic acid injected (0.25 gramme). Cinchona and alcohol; champagne.

1st August.—Temperature: A.M., 97°.4; P.M., 99°.3. Consciousness returning. The patient can talk. Tongue moist. Some desire for food. Heart beating regularly. Constipation persists. No more injection of any kind. Cinchona and alcohol. The patient drank some chicken broth.

2nd August.—Temperature: A.M., 97°.4; P.M., 101°. Improvement goes on. The patient ate some chicken and drank some milk. The swelling in the groin includes now several glands and is enormous; very little pus flows from the opening. On the foot a large phlyctæna encircles the slough. No œdema. Absolute insensibility of the region. Calomel (0.50 gramme), the patient having had no stool for five days. Cinchona and alcohol.

3rd August.—Temperature: A.M., 98°.2; P.M., 99°.2. Two copious stools; passed urine normally. The patient's features resume their normal aspect. Great weakness. The slough on the foot has separated, leaving a healthy surface. Light food—milk, rice and chicken.

4th August.—Convalescence may be said to set in decidedly from this day. Considerable suppuration from the first bubo. The inguinal swelling slowly disappeared, while the foot healed speedily. The patient had become extremely thin. Mental weakness approaching imbecility lasted for about two months. Later on, however, all trace of the disease disappeared. The patient has recovered all his strength and vigour, and is as sane as before.

Case II.—Female Annamite, aged 21; living in the same house as Case I. Two months' stay in Mengtsz. In good health till now, but subject to dyspepsia, caused probably by her habit of constantly chewing strongly-spiced substances. Of average strength. Seen at the time of our first visits to Case I. Had been complaining of fever, headache and vomiting for one or two days before our being asked to examine her.

27th July.—Extraordinary irritability of temper; in fact, she is already delirious. Face flushed; looks bewildered. Complains of excruciating headache and backache; moaning all the time. Tongue red, dry. The buccal mucous membrane is inflamed; some superficial excoriations are seen on the internal surface of the cheeks. Quinine taken has been vomited. Constipation; urine scanty. Hurried breathing.

Pulse extremely rapid, uncountable. Temperature: A.M., 105°.3; P.M., 106°.4. The heart's action is so tumultuous that the condition of the organ cannot be ascertained. Menses suppressed. No particular tenderness in the hepatic or splenic region. Ipecacuanha (1.50 gramme) administered. Two hours after, antipyrin (2 grammes) and sulphate of quinine (1 gramme). Medicines vomited almost immediately. Injection of morphia (0.01 gramme), to control vomiting, had no result. No enema can be administered.

28th July.—Every symptom aggravated. Extreme restlessness; violent delirium. Temperature: A.M., 104°.6; P.M., 106°.3. Constant vomiting. The patient is shrieking, foretelling her death. No medicine can be swallowed. No stools; no urine. The wet sheet was applied for an hour and a half, which quieted the patient very much, the temperature having fallen 1½° at the end of the wrapping. A second injection of morphia, to control the vomiting, remains unsuccessful. It is not repeated, on account of the cerebral congestion and the arrest of the renal functions. Compresses to the epigastric region. (No ice is obtainable in Mengtsz.)

29th July.—Situation becomes steadily worse. Suicidal attempts repeatedly made. Vomiting not stopped. No stool; no urine. Heart fluttering as in asystolia. Cerebral symptoms command the scene. Temperature, A.M., 106°.3. A small, very painful swelling appears under the lower jaw on the left side. The temperature rising, a cold bath, at 80° F., is prepared, and the patient placed in it. Champagne administered during the bath and not rejected. At the end of the bath the temperature of the water is 65°. Three hours after the bath the patient's temperature is 98°.5. No delirium; the patient is quiet. Late in the evening the temperature rose again to 106°. Furious delirium. The wet sheet was applied, when suddenly syncope occurred. Ether and cafein restore consciousness. Everything is done to excite the circulation; the heart starts again, but feebly.

30th July.—In the morning the patient became collapsed again and sank.

CASE III.—Chinese boy, 10 or 12 years old. Looks very weak and wasted, but accustomed to hardship, as are many of these wretched Chinese boys, without anybody to care for them. The day before the first symptoms of illness he was seen running behind a foreigner riding for a distance of about 8 miles.

8th August.—To-day sudden illness. Headache; backache; intense depression; tongue loaded; anorexia; no vomiting; constipated; no urine; pulse weak, rapid. Temperature: A.M., 105°.2; P.M., 105°.1. Although the 1st day of the disease, a bubo appears in the left groin and is already quite distinct. A large scratch, dry, not inflamed, is detected on the back of the corresponding foot. 0.50 gramme calomel. Wet sheet for one hour. Alcohol and cinchona.

9th August.—Prostration increasing. No delirium, but the boy is quite unconscious. Had one stool; no urine. Pulse uncountable. Temperature: A.M., 104°.3; P.M., 106°.2. Nothing discoverable in the chest. No sensibility in the hepatic or splenic region. Bubo increasing rapidly. Several glands are included in the swelling. The surrounding tissues do not look inflamed. Sulphate of sparteïn (0.05 gramme) injected alternately with valerianate of cafein (0.20 gramme), in order to facilitate the working of the heart, which is more and more impeded. Wet sheet.

10th August.—Remarkable remission of the fever in the morning. Temperature: A.M., 99°.3; P.M., 105°.3. Pulse slower but hardly felt. In the morning the boy was semi-conscious. Took some cinchona and alcohol. Constipation; passed some urine. No fluctuation yet in the swelling, which grows enormous. In the evening became delirious. Pupils dilated, insensitive. Sudden rise of temperature to 105°.3. Respiration hurried, panting. Pulse running, miserable. Died at night.

CASE IV.—Chên-t'ai's son, 7 years old. Had been ill for two days before being seen. Sudden sickness, marked by intense cerebral symptoms from the beginning. The child complained of headache, backache and general pains all over the body. Restlessness; sleeplessness; no cough; passed urine; constipated; was purged without result.

2nd June.—When first seen the little patient seemed dying. Quite unconscious; profound prostration; pupils dilated, insensitive; lies with mouth open; heart sounds hardly audible; pulse miserable; temperature 105°.1; respiration superficial, irregular; mucous râles at the base of the lungs; no stool, no urine to-day; abdomen retracted; no swelling anywhere; bathed in cold sweat; limbs icy cold. Injections of valerianate of cafein and sulphate of sparteïn alternately. A small bottle of champagne is swallowed with some difficulty. Rubbing of the limbs with flannel soaked in alcohol.

3rd June.—In the morning better, consciousness having returned. In the afternoon death suddenly occurred.

DR. E. H. BALDOCK'S REPORT ON THE HEALTH OF SEOUL (COREA)

For the Year ended 30th September 1894.

SINCE the last Report from Seoul the number of foreigners—that is, Europeans and Americans—has steadily increased, until now it is estimated at 120, of which children form a very large proportion.

The insanitary condition of the city remains the same, and is as bad as the natives can make it, though, fortunately, the whole town is situated in a well-drained basin. Nearly every house has its particular drain, well flushed by the rain, and it is to this fact that the city owes its generally healthy condition.

There have been no epidemics during the past year, and small-pox, which generally runs rampant during the winter months, has been infrequent.

Among foreigners an intractable form of remittent fever was observed.

It ran its course in from two to three weeks, and in one case relapsed 14 days after the first attack had ended. Quinine appeared to be useless, and in large doses only added materially to the discomfort of the patient. A persevering use of 5 grains of sulphate of quinine with small doses of arsenious acid every four hours, with careful attention to the functions of stomach and liver, seemed the most efficacious plan of treatment.

During September there was a total absence of rain, which gave rise to a pretty general epidemic of diarrhœa, and in two cases dysentery developed.

Epidemic influenza has been observed in several cases. They presented the same appearances as in the epidemic in England of 1891–92, but the disease did not spread to any extent.

Among the Coreans, dyspeptic conditions and malarial affections come foremost of all others.

Venereal diseases are extremely common, but actual syphilis is not so universal as accounts would lead one to suppose. It is a fact that the Hunterian chancre is extremely rare, only nine cases having been observed out of 4,000 out-patients. The form in which syphilis most frequently comes under observation is the tertiary, such as perforations of the palate, sore noses and the various ulcers and skin lesions. The soft sores are common enough, and in regard to these I could never see the utility of the actual cautery or nitric acid when iodoform will heal the whole much more quickly and painlessly.

The idea seems to be prevalent that leprosy is common in Corea. If, however, this is the case, patients suffering therefrom do not come to Seoul, as I have only seen two cases in 18 months—one of lepra nodosa, the other of lepra anæsthetica. They both came from the southern provinces. According to the patients' accounts, none of their family had anything of the kind, neither did they know nor had they heard of any others in their district with the

same affection. Several cases of supposed leprosy have been sent up from the country, but they have turned out to be cases of multiple neuritis, due, in all probability, to alcohol.

Some horrible cases of cancrum oris come under observation, in which the whole cheek has sloughed and exposed all the teeth and the jaws of one side. Treatment is absolutely useless. Even when seen earlier there is very little chance of recovery.

One case of hydrophobia was noticed in a boy three months after having been bitten in the leg by a dog credited with rabies. He had been ill four days. The parents, refusing to leave him in the hospital, took him home to die.

The following illustrates one of the native methods for treating strangulated hernia:—

Patient, a woman of 58 years, admitted on 22nd August. She had a sausage-shaped swelling about 5 inches long by 2½ inches broad extending from the middle of the groin downwards and inwards to the labium of the right side. From her account she had had this trouble for years, getting better and worse at times, but that four days previously she suddenly experienced great pain in the swelling, which increased in size. A Corean doctor then saw her and burnt a hole in the skin and subjacent parts over the middle of the tumour. This is said to have relieved the pain somewhat, but the next day the swelling burst, and on admission there was a round, sloughy hole, from which protruded a black, dry piece of omentum. She was extremely collapsed, vomiting constantly. She had had no solid food for four days, and the bowels had not acted for the same time. 1 grain opium pill given at once, and some tincture of opium and brandy a little later. As soon as possible she was put under chloroform. The opening was enlarged and a quantity of fetid omentum oozed out. At the bottom of the sac was found a knuckle of intestine of a dark reddish-purple colour coated with lymph and adherent to all its surroundings. The whole sac and its contents were well washed with 1 in 20 carbolic, afterwards with 1 in 40. The neck of the sac was freed all round and slightly incised. Bowel was returned and the omentum cut away, three silk ligatures being applied and their ends left long. The sac was dissected out and cut away as close up as possible. Wound was allowed to granulate up from the bottom, no stitches being applied. The bowels acted freely the same evening, and the patient made an uneventful recovery.

A usual accident complicating tracheotomy may be worth noticing.

Patient, a feeble old woman of 63, admitted for œdema of larynx about noon on 29th August. She had had a sore throat for six days, but on the 28th August she said she very nearly choked. There was some reddening of the fauces, and on examination with laryngoscope, the epiglottis was swollen and turned over, while the aryteno-epiglottidian folds were white, glistening and œdematous, almost meeting in the middle line. Respiration was most difficult—44,—with pulse 120; the patient much distressed, with perspiration pouring from her face. Some considerable cyanosis existed. The œdematous portions were very freely scarified and hot compresses, etc., applied. At 5 P.M. she was decidedly worse, and spasms of suffocation supervened. As I had no laryngotomy tube, I performed a high tracheotomy, meeting with no difficulty except that the isthmus of the thyroid was rather enlarged and had to be drawn downwards before the trachea could be opened. The operation was at 5 P.M.; at 6 P.M. I left her conscious, breathing quietly and quite comfortable. At 7 P.M. the sister in charge noticed a little blood trickling from the dressings. This increasing in quantity, I was sent for and arrived at 7.45 P.M. By this time the patient had lost a good deal of blood, and some had run down into the trachea, producing violent fits of coughing; she was very collapsed. All the dressings were at once taken off and all stitches removed, and after a tedious search, much embarrassed by difficulties of light and the rapidity of the oozing, the bleeding was controlled by Spencer Wells' forceps. The blood welled up from the bottom of the wound and came from some vessels behind the isthmus, which had most probably been torn by the retractor. After this proceeding the condition of the patient was critical, and an enema of 1½ pint of brandy and water was administered. This revived her for the moment, but she rapidly fell off again until 8.45 P.M., when she

was nearly in a dying condition, almost pulseless, the breathing gasping, and totally unconscious. After a hypodermic injection of ether, I opened the median basilic vein and introduced 1½ pint of warm normal saline solution. The pulse at once improved and consciousness returned. She then had a few curious trembling fits, during which her teeth chattered and she complained of the cold. Hot towels were applied to the præcordium. The patient passed a good night, and, except that the throat and tracheotomy wound took a good deal of trouble in order to keep them sweet, nothing out of the way happened. She went home on 8th September.

Malignant diseases are not common, myeloid sarcomata of the jaws and epithelioma of tongue and mouth being the more usual. The sufferers generally apply for help when they are totally beyond the reach of surgical interference. Tubercular diseases form an extremely large class and present themselves in all forms. Those cases in which the bones are affected are most troublesome, as after repeated scraping the disease appears again and amputation is the only resource left; even then it is advisable to go well above the disease or a recurrence may be expected in the stump.

An interesting case of compound fracture occurred.

A boy, æt. 17, admitted on 21st April. Three days previously a bullock cart had passed over his leg. On admission the limb had five pieces of bamboo, about 6 inches long, placed at intervals round it; these were kept in position by some bark, and a dirty rag was wound round the whole. The tibia and fibula were broken, the latter in two places, while the lower fragment of the former protruded from an anterior wound. It was all scrubbed, cleaned and packed with iodoform and put on a back splint. There was much inflammation, and a piece of the lower fragment was sawn off to make a freer exit for discharges. Four other openings were made in dependent positions to allow of the escape of pus. All splints had to be put aside and the limb was steadied by sand-bags. Although the pyæmic condition lasted for eight weeks, the boy eventually made a good recovery and has a very fair leg.

A rather unusual complication was met with in a case of ununited fracture of the patella.

A vertical incision was made, the patella exposed, and a slice sawn off either fragment, when it was found that there was a commencement of pulpy disease of the synovial membrane of the joint. The operation was, however, proceeded with, the bone tied with thick China twist silk and the wound closed. All healed, and the patient was discharged in six weeks, very pleased with his leg. The two fragments had united by firm though fibrous tissue.

Some 20 cases of bullet wounds have been treated in the hospital. Eight of these came from the south, whither Corean soldiers had gone to quell the Tonghak rising. These men had been conveyed in various chairs and improvised stretchers for 12 days. Their wounds had never been even washed and were most foul. The most interesting were:—

(1.) Through knee-joint from above the outer condyle, emerging 2 inches below the articular surface of the tibia on its inner side. The leg was amputated in the lower third of the thigh. (2.) Through the arm, fracturing the humerus—about its middle,—of which 2 inches were loose and were removed. The bullet was found under the deltoid two days after admission. (3.) Through the upper jaw into the nasal cavity. (4.) Through the lower jaw; the bullet being removed from the neck. (5.) Through both buttocks, entering a little behind the great trochanter and emerging at a corresponding place the other side. All these cases made a good recovery.

After the taking of the Palace by the Japanese on the 23rd July, another batch of wounded were admitted. The most important cases were:—

(1.) Through the right chest, 3 inches below the right clavicle, emerging through the scapula below the crest. (2.) Through the leg, piercing the tibia 4 inches below the joint. (3.) Bullet lodged in the

tibia, splintering it 5 inches below the joint. (4.) Fracture of femur at its middle by a shot which passed through the thigh. About 2½ inches of femur were carried away and the remainder badly splintered. These two latter cases were at first taken to the Japanese military hospital; two days later the men were, according to their own account, turned out to shift for themselves, and were admitted into the hospital the same night at 10 P.M. The wounds were covered with antiseptic dressings, but notwithstanding, the smell was abominable, and maggots were found crawling between the dressings and the wounds. The last case was eventually amputated in the upper third, and though the wound has all but healed, the poor fellow is so run down that his ultimate recovery is doubtful.

NOTE ON "YEMPYENG."

A febrile disorder lasting from seven to eight days, characterised by extreme anæmia and prostration, and terminating in a crisis.

Etiology.—It appears to prevail in most parts of Corea, and by the Coreans is considered contagious. It is certain that conditions of ill-health and privation predispose to the disease, and some cases have been observed in which the disease appeared to have been acquired from those already suffering from it. Thus, three in-patients—surgical cases—and a servant contracted the complaint while there were cases in the hospital, the three in-patients never having gone outside the compound wall. Again, a man was admitted on the 5th day of the fever, and 10 days afterwards his wife and two children were taken ill and were admitted—the woman and one child on the 5th, the other child on the 4th, day of the illness.

The disease first makes its appearance about the time of the breaking up of the frost, towards the end of March and beginning of April, though an occasional case occurs earlier than this. In 1894 there were admitted 1 case in January, 3 cases in February, 10 in March, 34 in April, 41 in May, 17 in June, and 7 in July. With the commencement of the summer rains and the hottest part of the season the cases come to a sudden end. Thus, in 1893 the last case was seen on 15th July and in 1894 on 14th July. One attack is said by the natives to predispose to others, but this has not been confirmed as yet by experience.

The majority of cases are among the lower classes, and those applying for admission are, as a rule, men who have come to Seoul from the country. The reason for this is obvious, as the innkeepers and Coreans generally turn a man out into the streets as soon as he becomes definitely ill. There is no probability of scarcity of food accounting in any way for the disease, as a starving Corean is almost unknown.

Symptoms and Progress.—The onset of the disease is, for the most part, definite, so that the patient will be able to tell how many days he has been ill, and in the majority of cases his chart shows him correct. It commences with pains in the head, back and limbs; this is followed by some heat and dryness of the skin; the headache, generally frontal, increases, and extreme debility and anorexia supervene, with often a very feeble, slow pulse. The face is strikingly pale and sallow, the eyes sunken, the body is dirty and uncared for, the hair in tangles and the clothes in tatters. On the 5th day the patient is so prostrate as to have a tendency to sink into a heap on the floor. On the 7th or 8th day a more or less profuse perspiration breaks out, and in a few hours the temperature falls to normal or subnormal through sometimes as many as 8°. During the attack the temperature does not range very high, being, as a rule, about 102°–103°. Patients are occasionally admitted with a temperature of 99°; in

the morning a bath and some food in a warm room are given, and the temperature runs up to 103° by the evening. The pulse is always feeble, thin and slow, but becomes quicker as the temperature rises.

The tongue is characteristic, being always coated with a thin moist white fur, the tip and sides remaining pale pink. In severer cases it later on becomes dry, brown and glazed, while in the worst cases it is covered with a thick black crust and presents large bleeding cracks. Sordes often appear on the teeth; the lips become dry and cracked. Great thirst is a prominent symptom.

The mental depression is extreme, while the principal complaint is of headache. There is also tenderness over the liver and spleen. The condition of the bowels varies, being sometimes loose, sometimes constipated. Early on the 6th day or late on the 5th a very considerable proportion of cases suffer from epistaxis, which is sometimes so severe as to require the plugging of the nose. Little or no relief is the result, except that perhaps the headache is a trifle better. Patients are, as a rule, conscious throughout, though stupid and dazed, while most are obstreperous and have a way of wandering round the compound and lying about in the most undesirable fashion. The worst cases become comatose, rapidly sink and die. In 1893 some of the fatal cases presented a curious condition of gasping breathlessness, pain in the throat and difficulty in swallowing some six hours before death. Nothing was discovered to account for these symptoms. Two cases in pregnant women occurred which resulted in miscarriage, one of the women dying of hæmorrhage.

After the crisis the tongue cleans gradually from before backwards; the general condition remains very low for some time, but the patient expresses himself as feeling quite well and asks at once for his native food.

The mortality among Coreans is said to be considerable. The people are much more afraid of the disease than of small-pox, and unless a man has a house of his own, he is put into a temporary straw hut by the city wall until he dies. Of those admitted, the majority recover and the prognosis is good, unless the patient comes under observation too late or there is some intercurrent disease. The fatal result may happen from pneumonia, bronchitis, uræmia or collapse. Convalescence is slow, but not as a rule complicated with sequelæ. Among the latter, jaundice is frequent, and it occurs on the 2nd day after the crisis and is more common in those cases which have had severe epistaxis. Bronchitis and albuminuria have both occurred as sequelæ. Some cases of partial paralysis have ascribed their trouble to this disease.

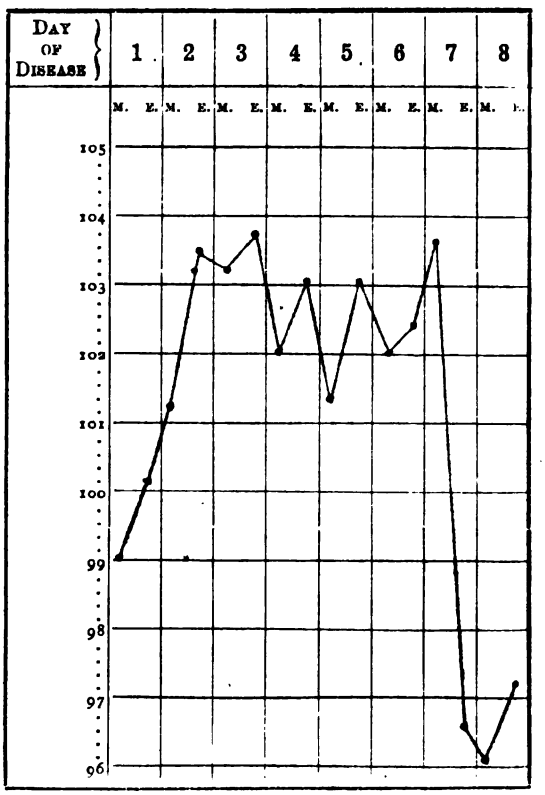
Treatment.—Many and various drugs have been given, but, as usual in specific fevers, all are useless in the matter of cutting the attack short. On the supposition that the disease was of malarial origin, quinine in small and large doses was tried, with no effect, the larger doses doing more harm than good. Opium was given in two cases in which the persistence of the pains tempted its use, and the result in both was nearly fatal, though less than 2 grains were administered. Pilocarpine has been recommended to produce sweating, but it only lowers the vitality of the patient without producing any permanent benefit; besides, on the 7th day the patient will sweat quite enough without medicinal aid in this direction. The only cases in which its use is indicated is in those where uræmic symptoms threaten and in those few cases of difficulty of swallowing and breathing already mentioned. The most satisfactory

results have been obtained by giving a hot bath on admission and putting the patient in a warm room. Beef tea, broth, milk and eggs, also brandy, will probably be required. At bedtime on the 1st night, 2 grains of calomel, and a dose of salts in the morning, providing, of course, that the patient is not too ill for such treatment. This seems to lessen the cases of epistaxis and certainly brings down the numbers of consecutive jaundice. 3 minims of carbolic acid in solution of chlorate of potash keeps the mouth sweet and comfortable,—it also seems to suit the cases remarkably well; while the temperature can usually be controlled by acetanilide, which is given in doses of 5 grains if the thermometer reaches 103°. Special complications will require special treatment, but most cases will do well under the above *régime*. Of 113 cases admitted in 1894, only one died—a man of 50 years of age, who at the crisis developed acute bronchitis, which rapidly proved fatal.

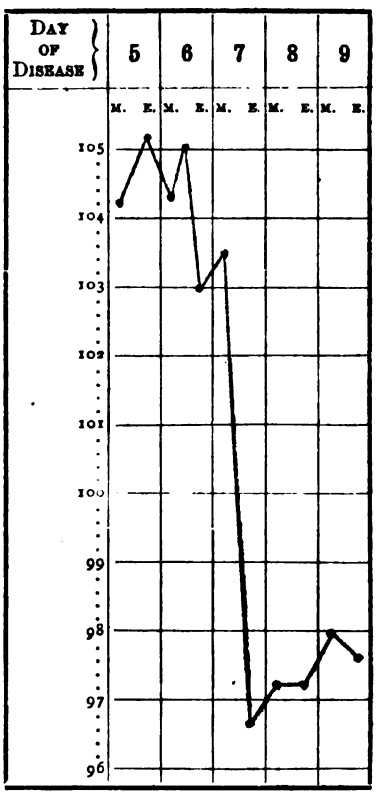
From the preceding description it will appear that in a great many points this fever resembles relapsing fever. It evidently belongs to the class of typhous continued fevers and has a seven days' duration. It also ends by crisis, following which the patient suddenly feels remarkably well, and there is, as a rule, no rash or other eruption. The main points of difference appear to be—absence of jaundice during the fever, the *yempyeng* tongue, the epistaxis on the 5th or 6th day, and the anæmic condition of the patient; added to which are the facts that the characteristic spirilla of relapsing fever has not as yet been discovered and that *yempyeng* does not relapse.

The following are the temperature charts of nine cases of this fever; Case No. 1 is that of the servant and Case No. 3 that of the surgical in-patient before alluded to:—

CASE No. 1.



CASE No. 2.



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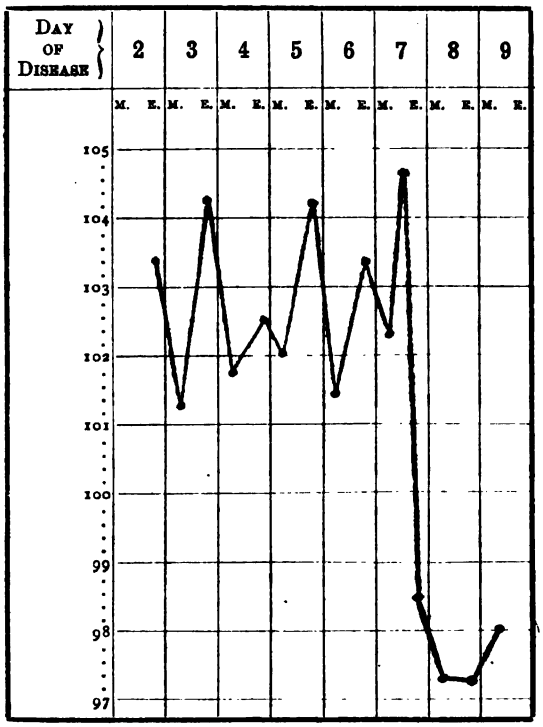

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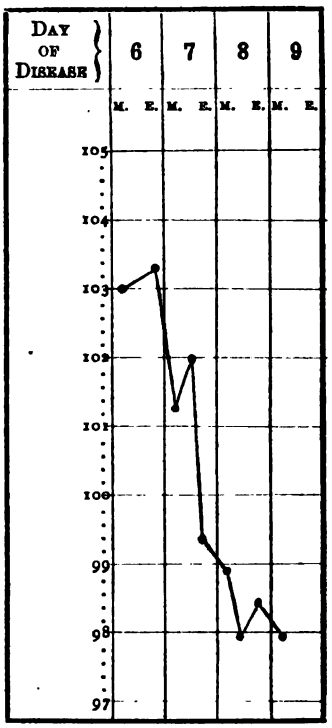
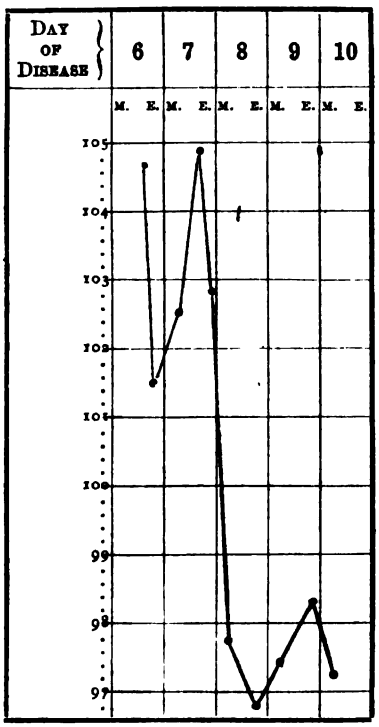


CASE No. 5.



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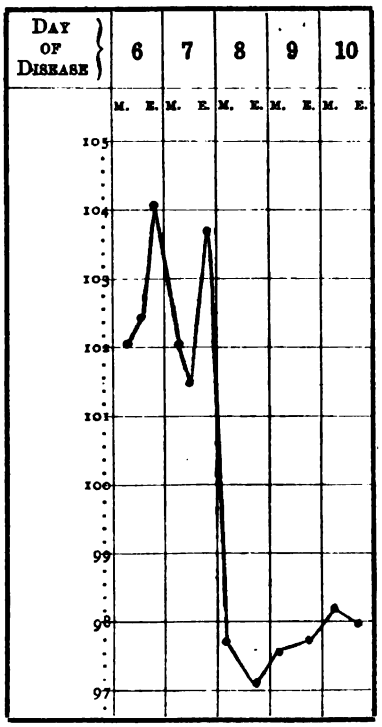

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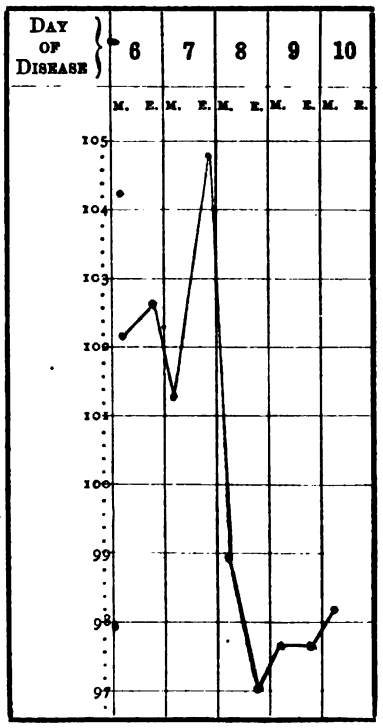

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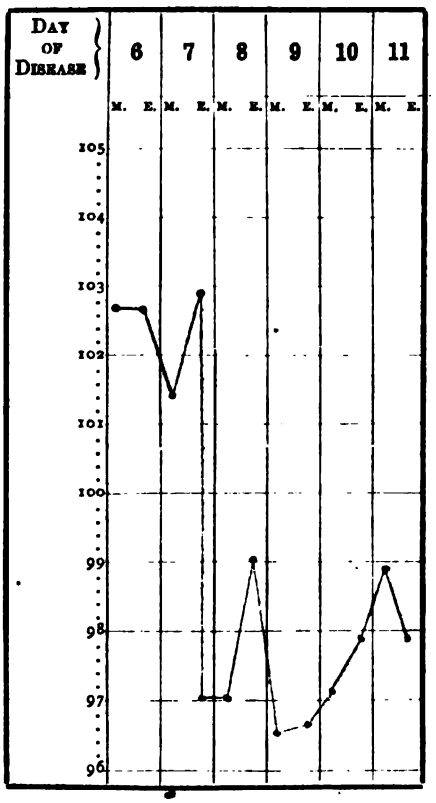

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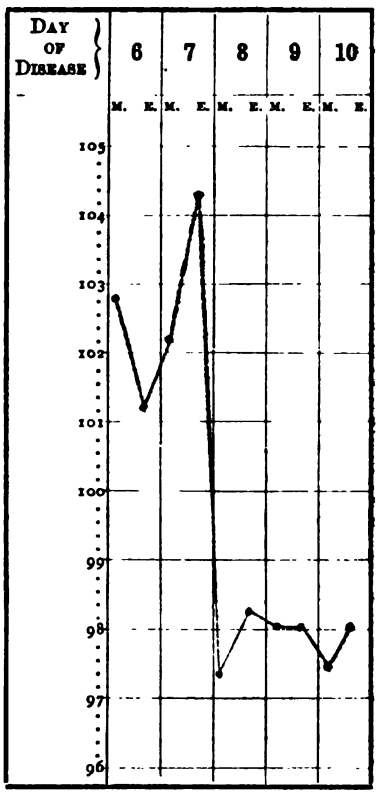

REPORT ON THE PLAGUE PREVAILING IN CANTON DURING THE SPRING AND SUMMER OF 1894.

By ALEXANDER RENNIE, M.A., M.B., C.M.

IN China little or nothing had been heard of the plague since its prevalence at Pakhoi in 1882, so that its appearance at Canton in March 1894 was somewhat unexpected. Europeans, by the ravages of centuries, were rendered painfully familiar with the disease; but to them all interest ceased on its disappearance from Europe in 1841, and in 1844 from Egypt—its home for over 20 centuries. Several years passed, and epidemiologists were beginning to believe the virus was extinct and the plague a thing of the past when attention was directed to an outbreak in Assgr, Western Arabia, 1853; followed by outbreaks in Bengazi, North Africa, 1858; Persian Kurdistan, 1863; the banks of the Euphrates, south and west of Hillah, 1867 and 1873; extending as far north as Bagdad, 1876, and over the country lying between the Tigris and the Syrian Desert. It now appeared in South-eastern Persia and gradually extended northwards to the southern shore of the Caspian Sea; and in 1878 broke out in the province of Astrakhan, Lower Volga, thus reappearing on European soil after an absence of 37 years.* It would thus appear that, though often seemingly quiescent, the plague has never really been extinct; and now, brought face to face with its presence in Southern China and Hongkong, menacing as it does commercial intercourse with the West, we must realise that the outbreak is fraught with danger.

The presence of the plague in the Chinese Empire does not seem to have been brought to notice until the outbreak in 1871, at P'u-êrh, in Yunnan, during the great Mahommedan Rebellion. With its subsequent progress in that province we have been made familiar by the notes of Mr. E. ROCHER and travellers such as BABER and BOURNE, and also by the French missionaries, who have on one or two occasions been attacked by the disease.† From the observations of these men we learn that the plague is endemic in Yunnan, prevailing annually from March to July, the summer heat being evidently adverse to its progress. Its severe epidemic violence in 1871–73 was doubtless accentuated by the misery and privation attendant on the horrors of civil war. According to Mr. ROCHER, opinion in Yunnan is divided as to the origin of the disease, some stating that it reached the province from Burma, while others maintain that it had existed previously in Tali-fu, in the extreme west of the province. In the absence of authentic history as to how long the plague has existed in Yunnan, we may be justified in inferring that the outbreak there is traceable to sources further west. The disease prevails in Northern India—under the name of *máhámari* or *pali*,—and, as we have seen, has prevailed in Persia and the neighbourhood of the Caspian Sea; thence it may have found its way to Yunnan through Thibet or Northern Burma. Of course there

* Vide *Papers relating to the modern History and recent Progress of the Levantine Plague*, presented to Parliament in 1879.

† See also *Customs Decennial Reports*, pp. 670–672.

are writers who regard China as being the original home of the disease, whence it issued forth centuries ago to devastate the world. What their authority may be we cannot say, but probably it is no more reliable than that which has led certain speculators at all times to ascribe to China the honour of being the source alike of those diseases and inventions whose early history is involved in obscurity.

We can find no reliable evidence to show that the plague has been known in Canton previous to the present outbreak, although, of course, from vagueness of nomenclature, the history of any epidemic in China must always be surrounded with a certain amount of doubt. Making, however, all due allowance for this, we are, after diligent inquiry, obliged to accept the statement—received alike from official, medical and lay sources—that although from time to time various epidemics have prevailed in Canton, especially in the spring of the year, the particular disease in question has not hitherto been observed.

At the commencement of the outbreak the native doctors with whom we came in contact expressed themselves as quite ignorant of the nature of the disease. They held no particular theory as to its causation or treatment, but merely spoke of it in such indefinite terms as:—

時疫 *(shih-i)*: "season epidemic"—an indefinite term applicable to any disease prevailing in an epidemic form; and

瘟疫 *(wên-i)*: a term also indefinite, but one, nevertheless, most generally used by the people in connexion with the plague.

Later on many other names were applied to the disease, such as:—

鼠疫 *(shu-i)*: rat plague.

卵子症 *(luan-tzŭ-chêng)*: egg disease, or, rather, bubonic disease.

標蛇 *(piao-shê)*: "shooting snake"—a term said to refer to the rapidly fatal nature of the poison, and also to appearances on the body after pinching.

大頭天行症 *(ta-t'ou-t'ien-hsing-chêng)*:
紅絲疔 *(hung-ssŭ-ting)*: } terms which are said to be applied on account of certain appearances on the skin resulting from pinching by the fingers or scraping with copper cash, a method of treatment largely resorted to.

瘍子瘡 *(yang-tzŭ-ch'uang)*: this term was not in vogue at the beginning of the outbreak, and was no doubt borrowed from Yunnan, this being the common term in that province; it seems to refer to the boils appearing on the body.

In Pakhoi the disease has been known for quite 30 years, but little attention was drawn to it until the publication of Dr. LOWRY's report on the severe epidemic prevailing in 1882.*

Excluding as unscientific the theory that, under certain fostering conditions, the virus has originated *de novo*, the question arises, How did the disease reach the seaboard of China? The starting-point was doubtless Yunnan, and thence it most probably found its way to Pakhoi by one of the usual trade routes. The great highway of commerce between Yunnan and Kwangtung is the West River, on which are situated one or two entrepots of trade with Pakhoi and Lien-chou, through which opium and other products of Yunnan are transmitted to those cities. Inquiry in official circles shows, however, that no outbreak of plague has been

* Customs *Medical Reports*, xxiv *et seq.*

known at Nan-ning-fu, Wu-chou-fu or other cities on the West River, which we should expect to find if the disease had spread by this channel. We feel, therefore, justified in excluding this route and limiting ourselves to the more probable supposition that it reached Pakhoi overland through Kwangsi or the borders of Tonkin. Chinese authorities state that it reached Pakhoi from Tonkin, but as it is known sporadically in the borders of Kwangsi, this latter source is more probable.

From official sources we learn that in 1891 the disease broke out in Kao-chao, the prefecture adjoining Lien-chou, in which Pakhoi is situated; it had evidently, according to the Chinese, spread northwards from the latter city. During the present spring the disease prevailed in other places between Kao-chao and Canton; the outbreak at Yang-chiang was especially severe, and no doubt other towns and villages suffered equally from the ravages of the plague in its march northwards. An erratic course is characteristic of its progress, an observation which is fully borne out by a glance at Mr. ROCHER's map of its spread in Yunnan, where that traveller remarks that, "instead of visiting every village in its course, it would pass some completely by, returning, however, to those neglected spots months afterwards, when the epidemic would appear to have passed far away." * On the outbreak of the disease in Canton many persons, especially the well-to-do, removed into the country, thus forming fresh foci for its dissemination; and in the same way the outbreak in Hongkong no doubt arose from persons having migrated from Canton to Hongkong while actually suffering from the disease or during the short incubation period.

Apart from the risk of future outbreaks in South China, its presence there is fraught with danger to more northern ports. All attempts to keep out the plague by examination of steamers and quarantine regulations, such as have been adopted at some of the coast ports, must in the end prove futile, seeing that no control is exercised over the ingress of the disease by junks and other craft. Besides, there is nothing to hinder its spread overland, just as it reached Canton from Pakhoi. If it came to Canton by sea it is rather remarkable that Hongkong, which is nearer to, and in direct communication with, Pakhoi, should have been visited by an outbreak nearly two months later than Canton. In Hongkong improved house accommodation and hygienic arrangements may in the future prevent the plague attaining the same serious dimensions as in the severe outbreak of 1894; but what of the Chinese cities, where over-crowding, insanitary arrangements and filth provide the conditions so necessary for its propagation? History repeats itself: the disease may remain comparatively quiescent for a few years, but will surely be again called into activity under the same fostering conditions as preceded the present outbreak.

CAUSATION.

History shows that previous epidemics have been preceded or attended by certain conditions and circumstances pointing to a causal connexion.

1.—*Filthy and insanitary Surroundings.*—The sanitary arrangements of Canton are similar to those existing in other large cities of China. Public water-closets are established all over the city, from which both fæces and urine are daily removed and utilised as manure for

* *La Province chinoise du Yunnan.*

the surrounding country. A drainage system can scarcely be said to exist, unless we regard as such the ditches that run under the large paving stones of the streets, and receive rain water and refuse matter washed into them from the houses and shops. The city being flat, there is no fall to empty those drains, and as no municipal control is exercised over the cleansing of them, this duty devolves on individual householders, who, of course, attend only to the sections which more immediately concern them. Consequently the drains are more often than not choked up, and are practically cesspools containing fermenting animal and vegetable refuse. In the smaller streets waste material finds its way into open side ditches, which are usually in the same neglected condition. Several canals enter the city, and as the tide has a rise and fall of about 5 feet twice in the 24 hours, a certain amount of rubbish is carried off in this way. When, however, the river is abnormally low, as during the early part of the year, these canals are like stagnant pools, thick with decomposing matter.

The water supply is equally defective. People living near the river use the river water, which, containing as it does the refuse of the immense boating population, is of course very impure. The majority depend on surface wells, which exist all over the city. These merely contain surface and tidal water which has percolated through a porous soil sodden with the filth of centuries. Bad at the best of times, one can readily imagine the chemically impure state of the water in these wells, almost empty after such a prolonged period of drought.

To persons imbued with Western ideas of sanitation this state of affairs must sound very unwholesome, and no doubt would prove most deadly but for the attention which Chinese in general bestow on the proper cooking of their food and drink. As cities in China go, Canton is comparatively clean and healthy, and, so far as concerns immunity from epidemic diseases in general, may even compare favourably with Eastern cities boasting of more elaborate sanitary arrangements.

2. *Prolonged Drought.*—The rainfall in Canton during the winter months is very small, but during the past winter and spring was exceptionally so. Thus:—

		Inches
1893.	November	...
	December	0.01
1894.	January	0.80
	February	0.31
	March	1.87
		2.99

Intelligent Chinese regarded this absence of rain as the most important factor in the propagation and dissemination of the disease, rendering as it did both wells and drains more filthy than usual.

3. *Epizoötics among the Lower Animals.*—In addition to the mortality among rats, we learn from Mr. ROCHER that in Yunnan cattle, pigs and dogs die in great numbers previous to the outbreak of the plague. Rats, however, suffer more than other animals, and are thus said "to give warning *(p'ao hsin)*, for they tumble about and die in the streets." *

* BOURNE, *Report of a Journey in South-west China.*

The same circumstance was noted in Canton both previous to and during the epidemic. From districts of the city where the disease had lasted for some time rats entirely disappeared, but kept on dying in other parts to which it subsequently extended. They would come out of their holes in broad daylight, run and tumble about in a dazed condition and die. Certain officials took steps to have all dead rats collected, offering about 10 cash per head. Up to 8th May it was stated that the officer in charge of the west gate had in this way collected 22,000, which were duly interred outside the city. So far as we can learn, no other animals were affected. With a view to ascertain the cause of death, we from time to time examined the bodies of these rodents and noted the following postmortem appearances:—

1. Stomach distended and filled with particles of food, sand and indigestible substances; mucous membrane red and inflamed towards the pyloric end.
2. Liver much enlarged and congested, and containing (*a.*) encysted tapeworms (probably tænia saginata)—these were present in every case, in some as many as nine cysts being noted; (*b.*) ova of distomata, usually found in patches near the anterior border—in some the whole liver substance was infiltrated with ova.
3. Congestion at base of lungs present in some—about 40 per cent.
4. Glandular enlargement was present in 30 per cent. of those examined, but in a much less marked degree than in the human subject.

Is the disease in man and animals identical? Should bacteriological examination give an answer in the affirmative, then we must recognise that these rodents are active agents in transmitting the disease from place to place for long distances overland.

We regret that, owing to the strong antipathy of the Cantonese to any foreign interference either in the treatment or postmortem examination of these cases, we have been unable to obtain any evidence bearing on the pathological conditions present in the human subject. Much light will most probably be thrown on the pathology of the disease by the band of scientists who are engaged in investigating the question in Hongkong.

Course and Symptoms.

A few stray cases occurred in the beginning of March, but it was not until the end of the month that attention was awakened, on account of its fatal prevalence in a poor neighbourhood near the south gate of the city, and also in Nan-shêng-li, a quarter occupied by Mahommedans, among whom the mortality was very high. At this time the type of the disease was exceedingly severe—of those attacked, quite 80 per cent. dying. Towards the middle of April the cases we saw were of a milder type; but the disease subsequently became more severe and extended its boundaries to other parts of the city and also to Honam, the maximum mortality being reached about the middle of May. At the "Fang Pien So," an institution inside the north gate, we had opportunity from time to time of examining patients, and were thus enabled to form a more accurate estimate of the progress of the disease than by the slender and unreliable information obtainable from outside sources. Rain fell copiously during the month of May and beginning of June, so that many streets were under water; the temperature remained comparatively low.

But both these factors seemed to favour the propagation of the disease, as by the beginning of June it was rife in the western suburbs as well as in the surrounding towns and villages.

It is impossible to give any correct estimate of the mortality, as no official records of burials are kept. Comparing the estimates obtained from various sources, we believe the mortality from the beginning of the epidemic to the middle of June (the date of writing) to have been about 40,000—a large number, but, in a city with a population of about 1,500,000, by no means excessive when compared with the ravages of this fell disease in other cities. In the great plague of London (1665) it was estimated that 60,000 deaths occurred in a population of 500,000.

Although a goodly number of well-to-do people fell victims to the pestilence, the chief sufferers were the poor—over-crowded and badly housed. The people who escaped the scourge in the most marked degree were those living in upper stories and the boating population. With the exception of those put in boats after falling sick, scarcely a case was noted on the river. Many well-to-do people, observing this immunity, removed from their houses and made their homes on the water. Judging from this circumstance, therefore, and also from the fact that rats living in the ground and drains were the first animals to fall victims, we infer that the specific poison emanated from the soil. What the specific poison may be is not determined, but no doubt the insanitary conditions referred to, exaggerated by a prolonged period of drought, provided a specially suitable nidus for its growth and dissemination.

The immunity enjoyed by residents on the foreign Settlement of Shamien is remarkable, seeing that it is separated only by a creek some 20 yards wide from houses where cases of the plague occurred. Not only did foreigners living on the Settlement enjoy excellent health, but no case of plague occurred among their servants living on the premises; the rats also, up to the date of writing, remain healthy and lively.

The disease is not markedly contagious; it affects chiefly those occupying the same rooms and coming in close contact with the affected. Casual visitors, especially if there is free ventilation, are not liable to contract the disease. In its mode of spread, and in the limited area to which the poison extends beyond the body of the victim, the affection bears a remarkable likeness to typhus, although the course and symptoms show little or no affinity to that disease.

The malady runs no regular course, and has no characteristic eruption or day of crisis. With or without premonitory symptoms, such as malaise or rigor, fever sets in suddenly, rising to 105° or even 107° F., accompanied by headache, thirst, great restlessness, giddiness and subsequently stupor. In from 8 to 24 hours a glandular enlargement occurs in the neck, axilla or groin; in a few hours the swelling may reach the size of an egg, is hard and acutely tender. Coma supervenes, and death occurs in 48 hours from the onset or sooner. Cases lingering on for several days are regarded as hopeful, although relapses are liable to occur. The date of appearance of the bubo is most uncertain, and may occur at any stage of the fever; we have seen it as late as the 5th day, and as early as the onset of the fever. In a few cases vomiting of blood has been observed; in others petechiæ appear, but no characteristic eruption. In milder cases glandular enlargements are absent, the prominent symptoms being fever and diarrhœa with great restlessness and giddiness. Boils may appear during convalescence. Post-mortem lividity is very pronounced, giving rise to the term "black plague."

The chief sufferers are women and children, most probably because, leading a more in-door life, they are more freely exposed to the source of contagion. We have frequently remarked the number of female children suffering from the disease. A medical friend has suggested that as in wet weather Chinese stay in-doors, and so absorb a larger dose of the specific virus, the increase after rainfall may be due to this circumstance.

TREATMENT.

If not edifying, it is at least interesting, to glance at the line of treatment adopted by the native faculty. At first, and in the absence of previous experience of the disease, the usual remedies against fever were employed, but subsequently others, regarded more or less as specifics, were had recourse to. Recipes for nostrums claiming infallibility were freely distributed both by physicians and laymen. Of these the following translation is a fair sample :—

1. Pterocarpus flava, 1½ mace.
2. Betel-nut, 3 candareens.
3. Wild chrysanthemum, 3 mace.
4. Scutellaria viscidula, 1½ mace.
5. Taraxacum officinale (dandelion), 1½ mace.
6. Szechwan rhubarb, 1½ mace.
7. Kan-ts'ao (a kind of grass), 2 mace.

Mix these ingredients, boil, and drink the resulting liquid.

In addition, directions are given to rub the body with the leaves of the wild chrysanthemum chopped into paste.

The following formula was circulated by a gentleman possessed of a smattering of knowledge regarding Western drugs :—

To a teacupful of sea water add 2 candareens of lime made from stone (lime from other sources unsuitable). Shake and filter. To this add ⅛ tael of calomel. Rub this over the swelling.

In addition, when the patient is dangerously ill, dissolve a dose of iodide of potassium in warm sea water and drink at once.

Many nostrums were vaunted for purposes of gain, while others were distributed by benevolent persons free of charge. Prominent among these are so-called preventive remedies, although from the harmless composition of some we cannot but infer that the element of faith plays an important part. In the streets almost everyone kept smelling some substance which he regarded as endowed with virtues capable of neutralising the poison of the pestilence.

Later on more drastic measures were resorted to, such as burning and incising the swellings, even when no signs of suppuration were present. This line of treatment was certainly severe, but not marked by any success. In fact, taking the treatment all through, and leaving out of the question the pretensions of quacks, native doctors of good repute readily admit that drugs generally are powerless in arresting the progress of the disease.

Passing on from those remedies of a tangible nature, we turn to the devices suggested by superstitious belief, which is particularly rampant in the native character in proportion as ordinary remedies are powerless. With a view to dispel the evil influences, processions paraded the streets by day and night, accompanied by much noise and firing of crackers. Prohibitions

against the slaughter of pigs were equally unsuccessful; so at length the happy idea suggested itself to inaugurate a new year. Proclamations were accordingly issued ordering the 1st day of the 4th moon to be observed as such, and this day was therefore ushered in by the usual noisy demonstrations. The idea underlying this device was that so much suffering having filled the early months of the year, by this resort the misery would be left behind and the remaining months be happy. Dragon boats, which are supposed to possess power to drive away the evil influences, were called into requisition. These boats, after the proper Dragon Festival, are submerged in the beds of the streams until the time of the next annual celebration approaches; but on this occasion they were raised from their resting-places much earlier than usual and paddled along the creeks adjoining the city.

Although we had abundant opportunity of examining the disease in the city, foreign treatment was at a decided discount, and but few cases came under our care.

A. B., foreigner, resident in the city; was first seen on 1st March. Temperature 104°.5; pulse 96. Complained of pain in right groin. On examination found a small bubo, hard and very tender. On inquiry found that a servant resident on the premises had died the previous day, and although the exact nature of the disease could not be ascertained, still, from the fact that the total duration of illness was under 40 hours, accompanied by fever and giddiness, it was suspicious of plague.

Temperature ranged from 103° to 105° for four days, at the end of which period we removed patient to more healthy quarters. The temperature gradually declined, and under painting by iodine liniment and poulticing, the bubo was sufficiently soft to admit of incision on the 9th day, after which convalescence was rapid, although a fistulous opening persisted for some time afterwards.

In the few cases under our care the line of treatment was, briefly, free purgation by calomel at the outset, antipyrin to reduce high fever, quinine and stimulants when necessary. Having regard to the fact that the affection is more or less a form of blood-poisoning, some benefit might possibly be derived from the administration of germicidal remedies, such as carbolic acid, bin-iodide of mercury, etc. Our experience, however, in the matter of treatment has been too limited to warrant us in expressing an opinion on this subject; the rapidly fatal nature of many cases we saw led us to infer that remedies in most instances would prove of little avail, and that success must be chiefly looked for in the domain of preventive medicine.

DR. ALEXANDER JAMIESON'S REPORT ON THE HEALTH OF SHANGHAI

For the Year ended 30th September 1894.

THE weather during the closing three months of 1893 was perfect both from the point of view of health and from that of pleasure. No typhoons reached the neighbourhood of Shanghai, and, with the exception of a heavy blow on the 10th November, the air was free from marked disturbance, light breezes alone varying the prevalent calm. The temperature was slightly below the average calculated from the previous 20 years; but the October maximum (87° on the 1st) was higher than usual. The minimum for October was 40°.5 (26th). Winter began about the 10th November, from which date the air was distinctly cold, although frost did not appear until the 24th, nor did it last beyond the following day. The mercury fell slightly below 32° for a few minutes on the 28th. The maximum temperature for November was 76° (1st), and the minimum, 28° (24th). The mean temperature registered in December was exactly the calculated average. The maximum was 64° (19th); the minimum, 21° (16th). A few flakes of snow, the first for the season, fell on the 27th, and the fall continued lightly on the 28th. Meanwhile the days were for the most part dry and bright. Rain fell heavily on the 3rd and 10th October, but from the 10th to the end of the month there was not a drop. In November the number of rainy days was one-quarter of the average, and the quantity one-eighth. As regards the quantity of watery vapour in suspension, the air was drier in December than in any month previously observed; while the rainfall did not exceed one-fifth of the average. The first shower in the month fell on the 21st, closing a long period of absolute drought.

The temperature continued exceptionally mild during January and February, with which latter month winter may be said to close. The average for January was 40°.5, as against 36°.7, the calculated mean; and that for February 41°.4, as against 39°. January was for the most part dry, with one period of heavy rain lasting from the 23rd to the 27th, corresponding to a marked barometric depression and accompanied by heavy blows over the Shanghai district and along the coast. February was unusually dry. There were but 5 days of rain, the average being 11, and the rainfall amounting to 0.66 inch, as against an annual mean of 2.63 inches. February was remarkable also for a series of slight atmospheric depressions accompanied by moderate wind. On the 19th there was a strong north-easterly gale of short duration.

Spring was as regards temperature an average season, although the mean for April was 1°.8 above that calculated. The range of temperature was narrow. Thus, in March freezing point was touched only once—on the 13th,—while in May the mercury, which generally rises to 88° or 90° and has occasionally reached 96°, did not rise beyond 86°. March opened with

torrents of rain, which continued through the first eight days, after which the weather cleared, and for the remainder of the month there were but two wet days—the 22nd and 23rd. April, on the contrary, was rainy throughout. The number of days on which rain fell was 16 (the average being 13), but the total fall (3.74 inches) hardly exceeded the mean. Rain persisted through May, but was unevenly distributed. The greater part of the total fall was registered during a short but very violent thunderstorm in the afternoon of the 6th, and most of the remainder fell during two periods, from the 11th to the 17th, and from the 28th to the 31st. The thunderstorm of the 6th May was the third which had occurred since the beginning of the year. The first burst over the Shanghai district during the evening of the 11th April, and the second in the afternoon of the 25th. In March the winds were far more violent than in January or February. A heavy gale, densely dust-laden, occurred on the 27th. The winter monsoon did not break up until April, south-easterly wind being very exceptional at Shanghai or along the coast until late in that month. The predominance of wind from the south-east was more marked in May, although its force was less than that recorded in April.

The summer of 1894 will be remembered as one of unusual heat. Comparing the maxima, minima and means for June, July and August respectively with the corresponding figures drawn from the observations of 20 years, it is found that the maximum for June was 1°.7, for July 1°.8, and for August 6°.3 above the average; the minimum for June was 3°.6, for July 5°.9, and for August 4°.8 above the average; and, finally, the mean for June was 1°.4, for July 2°, and for August 2°.2 above the average. On the other hand, the temperature registered in September was rather below the calculated level. In spite, however, of excessive heat the summer months were not notably oppressive. This was due to the dryness which prevailed and the consequent facility of exhalation from the cutaneous and pulmonary surfaces. In June, beside light showers spread over nine days, there was one, and only one, period which could be called rainy, namely, from the 15th to the 19th. During this period the only thunderstorm for the month occurred. The total rainfall (4.49 inches) was but little above half the average. In July and August drought was still more marked. There were only five days of rain in the former month, with a total fall of 3.62 inches, of which 2.13 inches fell on the 1st, while the remainder accompanied two thunderstorms which burst over this region on the 8th and 27th respectively. August opened with a short rainy period lasting to the 6th, which was succeeded by absolute drought up to the 30th, when a heavy thunderstorm, which may almost be said to have broken up the summer, occurred. During this storm 2.07 inches of rain fell, out of a total of 3.89 inches. Thus, instead of the calculated average of 36 rainy days with a fall of 18.08 inches spread over June, July and August, the register for this period in 1894 shows 26 rainy days with a fall of 12 inches. September was dry up to the middle of the month, but between the 14th and the 30th there were 13 days of rain.

The heavy rain noted as having fallen on the 1st July and the rainy period with which August opened corresponded to the only two typhoons which approached the coast between Shanghai and Foochow during the summer. The first passed over Wenchow on the 30th June, and the second over Nankwan harbour (27° 10′ N.) on the 3rd August. While these typhoons were in our neighbourhood strong easterly and north-easterly breezes were experienced here. Otherwise the season was remarkably calm.

Deaths among Foreigners from 1st October 1893 to 30th September 1894.

Cause of Death.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Total.
Small-pox	...	...	...	1 3†	2* 1†	1	1*	...	...	...	...	...	9
Enteric fever	1*	1*	...	...	...	...	...	...	1	1	...	...	4
Remittent fever	...	...	...	...	...	...	1†	...	...	...	...	...	1
Puerperal fever	...	...	...	...	...	...	...	...	...	...	1*	...	1
"Fever"	...	...	...	...	...	...	...	...	...	...	1	...	1
Septicæmia	...	...	...	...	1	...	...	...	...	...	...	...	1
Diphtheria	...	1	1†	1	...	...	...	...	...	...	...	1	4
Syphilis	...	...	...	...	...	...	...	1†	...	...	...	...	1
Tuberculosis	...	...	...	...	...	...	...	...	...	...	...	2*	2
Phthisis	1*	1	2	...	1	...	...	1*	...	3 1*	...	1	11
Cancer	1	...	...	...	...	...	...	...	1	...	1	...	3
Bright's disease	...	...	1	1*	1*	...	2	...	...	...	...	...	5
Alcoholism	...	1	1	...	1	...	...	...	...	1	...	...	4
Anæmia	...	...	...	...	...	...	...	...	1*	...	...	...	1
Marasmus	...	...	...	1†	1†	...	...	...	...	...	...	...	2
Tubercular disease of brain and membranes	...	...	...	...	...	...	1*	...	...	...	2†	...	3
Heat apoplexy	...	...	...	...	...	...	...	...	...	...	1 1*	...	2
Cerebral apoplexy	...	...	...	...	...	1	...	...	...	...	...	1 1*	3
Tetanus	...	...	...	1	...	...	...	...	...	...	...	...	1
Convulsions	...	...	...	...	...	...	...	...	...	...	1†	...	1
Heart disease	...	...	...	...	...	...	...	1	1	...	...	...	2
Laryngitis	...	...	...	...	1†	...	...	...	...	...	...	...	1
Bronchitis	...	...	...	...	...	...	...	...	...	...	1†	...	1
Broncho-pneumonia	...	...	...	...	...	...	...	...	...	...	...	1†	1
Pneumonia	...	...	...	...	1*	1	...	...	...	...	...	...	2
Empyema	...	...	...	...	...	...	...	1†	...	...	...	...	1
Peritonitis	...	...	...	...	...	...	...	1	...	...	...	1	2
Gastro-enteric catarrh	...	1†	1†	...	...	1†	...	1†	...	...	...	...	4
Enteritis	...	...	...	...	...	...	...	...	...	...	1 1†	...	2
Diarrhœa	...	...	1*	...	...	...	...	1	...	2†	...	2†	6
Dysentery	2	1	2*	...	...	...	...	...	...	...	...	1*	6
Infantile cholera	...	...	...	...	...	1†	...	...	...	1†	...	...	2
Strangulated hernia	...	...	...	...	...	...	...	...	...	...	...	1*	1
Cirrhosis of the liver	...	1	1	...	...	...	...	...	...	...	...	...	2
Abscess of the liver	...	1	...	1*	...	...	...	1*	...	...	...	1	4
Accidental poisoning	...	...	...	1	...	...	...	...	...	...	1*	...	2
Accidental wound	1	...	...	...	...	...	...	...	...	1*	1*	...	3
Suicide	...	...	...	1*	...	...	...	...	...	1*	...	...	2
Drowning	...	...	...	1*	...	...	...	2*	...	1	1*	...	5
Old age	...	...	...	...	...	1	...	...	...	...	...	...	1
Uncertified	...	...	1	...	1*	...	1 1†	1*	...	...	...	...	5
Total	6	8	11	12	11	6	7	11	4	12	14	13	115

* Non-residents (36). † Children under 10 (28).

This table does not call for extended comment. No fatal case of cholera occurred during the year, although the disease, or the assemblage of symptoms which we call cholera, was common among the natives, and one unmistakeable case was admitted to the General Hospital in July 1894.

The patient, a French man-of-war's man of festive habits, had been drunk in the grogshops on the 24th and 25th. What had become of him on the 26th nobody seemed to know. On the morning of the 27th, having been arrested and carried on board his ship, he was seized with all the usual symptoms of cholera. When he arrived at the hospital prostration was extreme, the respiration was shallow, rapid and difficult, but the pulse had not disappeared, and the voice was to some extent preserved. His chief complaint was of intense heat. The skin was very cold, and the rectal temperature, which in consequence of

restlessness was taken with great difficulty and was not altogether reliable, was 100° F. A little highly albuminous urine was passed after 30 hours, and next day convalescence was fully established.

The mortality from small-pox was serious, and it will be noticed that four children died of the disease. The first European case for the season occurred on the 12th November 1893, but a Japanese had been admitted to the small-pox hospital on the 8th October. It is much to be desired that the Councils should obtain power to remove foreign cases of small-pox to hospital whenever the Health Officer or the practitioner in attendance reports that isolation is otherwise impossible. As it is, small-pox is frequently treated in private houses, to the serious danger of the inmates and even of the neighbourhood, the patients or their friends objecting to removal, and no power existing to enforce it. Diphtheria, as previously noticed, is increasing in frequency. On the other hand, it is satisfactory to observe that among residents there were but two deaths from enteric fever during the year. Diarrhœa and dysentery together killed four resident adults, a figure far below those annually registered a few years ago, when the water supply was in every way objectionable. Two residents and two visitors died of abscess of the liver. It is curious, but undoubtedly true, that (as is also the case with cholera) the fatality of this affection is far higher among foreigners in China than among foreign residents in India. In the latter empire the mortality after operation is 50 per cent. Here the numbers are so small that a per-centage estimate may easily be deceptive, but it is certainly no exaggeration to set down the death rate at at least 80 per cent.

In October 1893 my private sick list was made up almost exclusively by diarrhœa, inflammatory diarrhœa, dysentery, malarious fever, hepatic congestion, sore throat of various types, and bronchitis. Inflammatory diarrhœa was chiefly prevalent among children, and was doubtless often due to errors of diet for which native servants were responsible. A few cases of true dysentery requiring ipecacuanha were under observation, but most attacks of dysenteric character yielded to gentle laxatives and carefully regulated diet. The constipation of dysentery and of fluxes resembling it is not sufficiently recognised. Hence the mischief done by patent or proprietary anti-cholera and anti-dysenteric specifics, which tend to shut up within the colon scybala which are frequently the sole cause of watery and mucous discharges. It cannot be too widely known that while no harm can possibly be done by beginning the treatment of every case of diarrhœa or dysentery, without exception, by the administration of a gentle saline or oily laxative, the laxative will itself in the majority of cases be the only treatment required. The time for sedatives or astringents comes later, and even in dysentery there is no better preparation for the action of ipecacuanha than the clearing away of putrid matter which has accumulated before the specific symptoms declare themselves. With a few cases of remittent fever of the old "Shanghai" type, in so far as that was differentiated from enteric, and was therefore amenable to quinine and cholagogues, there was what might almost be described as an epidemic of intermittent fever, mostly of the quotidian type. The usual quinine treatment during the intermissions was always effectual. The beneficial action of antipyrin in cutting short the congestive stage of intermittent fever, and hastening the stage of sweating, during which quinine can be administered largely, should be borne in mind. 20 or 30 grains of antipyrin in two doses at an interval of a couple of hours act much more agreeably than the emetic and more rapidly than the purgative which used to precede with advantage the administration.

of quinine. There cannot now, I think, be any reasonable doubt of the existence of some sort of relationship between all forms of sore throat accompanied by exudation upon any portion of the buccal or pharyngeal mucous membrane. It is certain that some cases in which spots of deposit form on the tonsils, giving at the first glance the impression of follicular tonsillitis, and which are not infective so far as the individual is concerned, are contagious, contact with them lighting up diphtheria, which may prove fatal. The accuracy of this assertion I am unfortunately in a position to prove, as will be seen farther on. It is therefore imperative to isolate every case of sore throat in which any patches are seen, even when the affection, whatever it may be, is evidently running a benign course. Inflammatory affections of the air passages, seldom of much gravity, are common at the change of season, when hot days are succeeded by cool or cold nights. Thus also is to be explained the frequent occurrence of fugitive hepatic congestion in healthy persons at the same time of year, accompanied or not by vomiting either of reflex character or perhaps due to congestion of the stomach walls.

The remarks just read are applicable to the entire of the last quarter of 1893. During November and December as the average temperature fell malarial affections and intestinal fluxes diminished in frequency. Catarrhal sore throat and bronchitis continued to be observed.

The year 1894 opened with a burst of malarial fever not easy to explain. Cases, mostly of quotidian, presented themselves with great frequency, but none that I saw were of special gravity. All catarrhal affections—conjunctivitis, pharyngitis, bronchitis,—which had diminished during the previous months, again became prevalent. So also with diarrhœa, whether simple or dysenteric. Among children varicella was common, but cannot be said to have been epidemic. Small-pox, though not by any means widespread, gave rise to a sort of panic among the foreign community, which had the effect of creating an urgent demand for revaccination. Judging by my own experience I should think that by the end of February very few foreigners remained who had not been revaccinated.

Saigon lymph, which has always proved of excellent quality, has been largely—almost exclusively—used, and I imagine that the use of humanised lymph has within the past year been almost, if not altogether, abandoned. Vaccination with Saigon lymph is frequently followed by a generalised eruption and marked fever, but this latter seldom assumes important proportions. In three cases in which I used Brussels lymph the symptoms induced were of extreme severity, the entire body being covered with cow-pox vesicles and the temperature ranging between 102° and 105°. There probably was but little, if any, danger to life, and the disease in each case ran a much more rapid course than small-pox would have run. The actual suffering undergone during the worst period of the eruption was, however, in nowise less than would have accompanied an ordinary attack of discrete small-pox. From every point of view Saigon lymph is to be preferred to that imported from Europe or America; it has now proved its safety and efficiency, and there would seem to be no advantage whatsoever in making any experimental attempt to supplant it.

The small-pox scare continued through February as exaggerated reports of the wide spread and fatality of the disease reached the public. As a matter of fact, foreign residents in China are marvellously exempt from small-pox, considering the intimate relations in which they are compelled to live with the natives. The freedom thus enjoyed by foreigners is certainly due

to the care and frequency with which revaccination is performed. Interesting and valuable observations might be accumulated if the course of revaccination was in all cases noted from day to day.

Thus, a young foreign lady recently arrived in Shanghai had been vaccinated in infancy, and in early childhood passed through an attack of small-pox the scars of which were here and there visible. She had been revaccinated in two places a few years later and the marks of this operation were distinct, but it was impossible to say exactly from what time they dated. I vaccinated her with Saigon lymph on the 6th February. On the 10th February there was a minute papule at the site of vaccination, but no sign of vesiculation. She was so terrified by the possibility of catching small-pox that she begged me to vaccinate her again, which I did on the 11th. This second revaccination proceeded at first sluggishly, as the former had done. It was not in the least affected by the previous vaccination, but developed side by side with it. In each case a vesicle formed on the 5th day with a faint surrounding areola. The contents became milky on the 7th day, and frankly purulent on the 10th. Drying and scabbing followed quickly, and at the end of three weeks good marks were left.

A few cases of whooping-cough and of parotitis occurred among foreign children in late winter and early spring. The former was extremely prevalent among natives. Several adults suffered from pneumonia, and I observed an unusually high ratio of simultaneous affection of both lungs. Catarrhal sore throat, rheumatic tonsillitis, and sewer-throat came frequently enough under observation; but I know of no case of diphtheria having occurred before April. At all events, no death from this cause happened before that month. The circumstances attending a group of cases then observed were of the greatest importance as enforcing all that can be said about the insidious character of diphtheria.

A household consisting of husband, wife and two girls, aged respectively 18 and 14, were living on a terrace in Hongkew under ordinary conditions of hygiene and personal comfort. So far as I could make out by careful inquiry, no cases of diphtheria or suspicious sore throat had lately occurred in the immediate neighbourhood. The younger of the girls was at a boarding-school where the scholars are sedulously watched, and isolated on the first appearance of illness. The health conditions as to elevation, ventilation, drainage, cleanliness and dormitory space in this school are unexceptionable. No cases of any kind of sore throat had occurred there for several months. During the last week in March the younger girl complained of sore throat, and was immediately isolated. The mucous membrane was livid, the uvula œdematous, there was no deposit or exudation. Her maximum daily temperature varied between 102° and 104°. There was nothing particularly noticeable about the case except severe pains in almost all the large joints, none of which were hot or swollen, and that the degree of prostration was out of proportion to the fever and the apparent local condition. She rapidly improved under salicylate of soda, and on the 4th day her temperature was normal until night, when it rose to 101°, returning definitely to normal in the morning. Next day two small white spots appeared on the right tonsil and uvula. Two days later the throat was well, and so far as this child was concerned the incident terminated here. She continued in perfect health, and no further case of the disease, whatever it was, occurred in the school.

The girl's mother inquired for her every day, and, unluckily, became deeply discontented when she was informed that although the fever had disappeared and the throat seemed well, isolation and baths were still considered necessary. Without further ado she carried the child away with her, and, as was afterwards ascertained, put her to sleep in the bed occupied by the elder girl.

On the 12th day after the younger sister's return the elder felt generally ill, but went to school on the following morning. I saw her at night (2nd day of the disease). Her temperature was 105°, and she complained of headache, backache and sore throat. For want of light nothing very exact could be made out in her throat. Early next morning (3rd day) speaking and swallowing were difficult; the cervical

glands were tender and swollen on both sides; both tonsils, uvula, soft palate and anterior pillars were œdematous and covered with white exudation. The urine contained $\frac{1}{210}$ albumen (Esbach's test). The usual treatment by internal stimulation and local antisepsis was adopted. On the 5th day swallowing became easier after a temporary fall of temperature to normal during the previous night. At noon on this day I noted:—"The pharynx is invisible, as the œdematous anterior pillars, covered with exudation, meet in the middle line." The following night there was great frequency of micturition, and I was informed next morning that for the previous three days (since the evening of the 3rd day of the disease) a great deal of liquid blood had been flowing painlessly from the bowel. At noon on the 6th day I noted:—"Sudden change for the worse at 10 A.M. Face puffy and waxy, hands purple. For the first time respiration is accompanied by much retraction of the thorax. A sponge-like mass of exudation protrudes into the mouth from the right anterior pillar." I opened the trachea instantly without an anæsthetic, and apparently without causing pain. There was no exudation in the trachea. Respiration became easier. Death occurred two hours later.

There can be little doubt that the elder girl's fatal disease was caught from the younger, or that the disease in the case that recovered was diphtheria. The absorbed poison had, however, undergone a process of development in the first case which enhanced its virulence before its absorption by the second. Or it may have been that from unknown causes the tissues of the elder girl offered a more favourable soil to the invading germ, the germ itself remaining unchanged.

However this may have been, no paralytic symptoms followed recovery in the first case.

The history does not end here, although its special interest does.

Four days after the girl's death the mother complained of sore throat. There was very slight general inflammation, or rather relaxation, of the mucous membrane. Fever of remittent type lasted for four days in spite of full doses of quinine, no alteration being observed in the condition of the throat. The highest temperature reached was 102°.9, on the morning of the 4th day. The temperature on the previous day and through the night had varied round 99°. At 6 A.M. it suddenly rose to 102°.5, and this rise was accompanied by extensive exudation on the hard palate. Next day (5th), without any alteration of the voice, the uvula was engaged. Delirium now set in without excessive fever (maximum 101°). On the 6th day there was dysphagia for the first time, but it passed off rapidly, and did not recur for two days. On the 8th day the evening note was:—"Hands cold, tongue dry, exudation has been poured out thickly over entire throat, face dusky; she is very drowsy and indifferent." She died next morning after a quiet night, during which she once woke up and expressed the belief that she was getting well.

This tragical series of events took origin in the benign affection of the younger daughter, and would certainly not have occurred had not her isolation been interrupted and close contact permitted between her and the members of her family. She remained along with her father in close attendance on the two fatal cases, but having just gone through a modified form of the disease she was presumably protected ("vaccinated") against it, and had no further trouble. The father also escaped, possibly because he smoked incessantly day and night while sedulously nursing the patients.

I have now a sufficient number of very carefully registered cases to lead me to the provisional conclusions, (1) that every sore throat with fever and exudation is diphtheritic, and (2) that when exudation is preceded by a fall of temperature the patient is not in danger, but is no less a source of danger to others.

These conclusions are, as I have said, only provisional. In any case no harm can arise from acting on them.

Later on in the year other cases of diphtheria occurred. During March and April malarial affections and abdominal fluxes were infrequent, but many people suffered from the catarrhal fever without sequelæ which has locally been labelled "influenza." A few cases of varicella were treated among children, and tonsillitis was common.

In May and June I saw three doubtful cases of scarlatina in children, all of severe character, but all terminating in recovery. On account of the abnormality of the symptoms and of their grouping I am disposed to refer these cases to poisoning by various doses or various qualities of sewer gas. In all three the drains of the houses in which the disease occurred were in bad condition. A sketch of one case may serve for all.

Fever came on suddenly, rising to 104° on the 2nd evening. There was no coryza or lachrymation. The tongue was loaded, with here and there a minute patch of enlarged and reddened papillæ, but was in no sense characteristic. The tonsils were slightly enlarged. The throat was stripped in several places and bleeding, causing much difficulty in swallowing. On the 3rd day its surface was covered with a profuse muco-purulent deposit, easily wiped away with a dossil of cotton soaked in an alkaline solution. Simultaneously with this, erythematous patches appeared on the arms and legs, enclosing closely set minute scarlet dots. No patches appeared on the face or trunk. There was no albumen in the urine. On the 5th day the eruption began to fade and the temperature fell to normal, though the throat was still stripped of epithelium in one or two places. On the 6th day subnormal temperature, with branny desquamation of the skin patches; the throat normal. Next day the child was perfectly well, the disease having completed its evolution in exactly a week.

Measles was of frequent occurrence in May; and through the early summer months children, as is always the case at this season, when fresh fruit is plentiful, suffered severely from digestive and nervous symptoms due to lumbricoid worms, and from urticaria due generally to mangoes, lichees and strawberries. There was no great prevalence of either malarious fever or diarrhœa, and (speaking from my own experience only) cases of enteric fever were unusually infrequent. The Settlements must in fact have been remarkably free from this form of fever all through 1894, inasmuch as during the nine months from the 1st April to 31st December I had but four cases in my wards at the General Hospital, none of them of severe character and all terminating in recovery. It will be noticed that among residents only two deaths were attributed to this disease during the year under review. Bronchitis of more or less severity was common until the hot weather set in. With the onset of persistently high temperature the affections due to it, such as sleeplessness, general exhaustion, dyspepsia, anorexia and fugitive anæmia, showed themselves, as they do every summer, in forms generally of little real gravity. Two deaths (one of a resident) occurred in August from heat apoplexy, and many cases of fever, lasting two or three days and presenting none of the characters of malaria, were attributable to the high air temperature, often aggravated in its action by imprudent bodily exertion, the two together inducing the condition known as "fièvre de surmenage." Boils also were common. The diarrhœas of this period of the year usually follow chills caught during the enjoyment of currents of cool air while the body is bathed in perspiration, as, for instance, after lawn tennis. Distressing attacks of vomiting are not infrequently due to the same cause, to which also may be referred the great frequency of inflammation of the external ear. Malarious affections, though infrequent, are of course never altogether absent from the sick lists of the hot months, and when fever does occur it is very liable to assume a pernicious form, comatose in adults, and convulsive in children.

A patient about 40 years of age, leading a very regular life but forced to expose himself to the sun, had been ailing for a few days with fever of remittent type. The highest temperature registered on the 25th August had been 101°, and this only for a couple of hours in the afternoon. During the rest of the day the temperature had varied between 99° and 100°.

Through the night of the 25th–26th August he was sleepless and very restless, walking about, but not delirious. His temperature at 6 A.M. was 100°.2, and at 10.30 A.M. 100°.6. At this latter hour there was nothing strange in his manner, but I noted a curious "hunted look" on his features which I have observed in several cases of malarious fever on the point of assuming a pernicious form. At noon the temperature was 101°; at 2.30 P.M. 103°; at 3.30 P.M. 104°. At 5 P.M. he was quite unconscious, groaning, the face grimacing, the muscles of the arms and legs twitching, the skin of the face waxy, the lips violet, the skin of the trunk and limbs livid. He had rolled himself tightly in a thick blanket. Respiration very rapid and superficial, interrupted every now and then by a deep sigh. The pulse was apparently slow and intermittent, but twitching of the muscles made it almost impossible to judge of its character. An attempt to take the temperature in the axilla, the thermometer remaining only a few seconds in place, gave 106°.5. The skin was dry and scorching; the pupils were pinpoint.

Fifteen grains of bisulphate of quinine was injected subcutaneously in four punctures. The patient, deeply insensible, was placed in a bath covering the whole body to the chin, through which water from the tap was kept continuously running, the plug being removed and the bath overflowing. The supply of ice was extremely limited. I, however, secured enough to keep a block constantly supporting the neck, and a piece continually applied by gentle friction all over the head. There was reflex clutching of the edges of the bath as the water from time to time lifted the body. I had no ordinary thermometer to measure the temperature of the bath water, but I think it averaged about 78°. No observation of the bodily temperature was taken at the moment of immersion.

After 20 minutes immersion the temperature in the rectum was 108°.6.
" 35 " " " " " 106°.5.
" 45 " " " " " 104°.8.

At this moment consciousness returned. He recognised the people round him and said "I've come back; it's a miracle I've come back." He could now swallow, and sips of brandy and water were administered.

After 60 minutes immersion the temperature in the rectum was 102°.2, and he shivered.

He was at once removed from the bath, a light blanket thrown over him, and his body gently rubbed dry. 10 minutes later the rectal temperature was 101°.4. He was quite conscious and inclined to be loquacious, but was extremely deaf. 15 grains of bisulphate of quinine was again injected hypodermically. His skin now felt natural; respiration 20, regular; pulse 105, soft and fairly full. A large ice bag was ordered to be kept constantly applied to the back of the neck.

At 10 P.M. temperature 102°.4. Deafness was passing off. 15 grains of quinine were given in enema.

During the succeeding days the temperature on two or three occasions reached a maximum of 102°.5. Quinine was kept up in 10-grain doses every four hours, but on the 5th day, as it appeared to have lost its effect, it was stopped. All this time he had lain on an ice bag applied to the neck. He now suffered chiefly from sleeplessness, and a mixture of chloral and bromide of potassium was ordered. Meanwhile he was carefully nourished, and the bowels kept in order by frequent doses of a saline aperient. The temperature fell as soon as the quinine was stopped, and never reached 100° after the 7th day. Convalescence now proceeded without interruption.

In the last week of August two cases of diphtheria were under treatment in the General Hospital. In one case, a child's maid employed in a foreign house called to see a friend, and

casually mentioned that her throat was sore. Three minute patches of exudation were found on her tonsils, and she was retained, against her will, as she professed not to feel in any way ill, although she had been seedy for a few days previously.

Her temperature, in fact, was 99° and she had an excellent appetite. Next day the exudation had spread to the posterior border of the soft palate, and deglutition was difficult. There were no general symptoms; and after four days all the patches had disappeared. She was kept in hospital for another week, under the continuous use of local disinfectants. A month after her discharge I heard of her suffering from occasional cough during eating, and regurgitation of liquids through the nose.

The second case was that of a novice living in the Sisters' quarters at the hospital, seeing nobody from outside but members of her family at long intervals. How she acquired the disease is mysterious.

In her case, between the 3rd and 4th day of fever of remittent form, accompanied by slight swelling and tenderness of the cervical glands, a small spot of exudation was found on the left tonsil. This rapidly increased and spread to the right tonsil and thence to the back of the pharynx. The soft palate was very slightly engaged. Dysphagia was the most distressing symptom, and this appeared to be due more to pain in the neck than to any local soreness or mechanical obstruction. There was little interference, if any, with breathing. The fever continued until the exudation completely disappeared. Some weeks later this patient was inconvenienced by occasional regurgitation of liquids through the nose, and her voice retained a nasal twang for months.

A few weeks later, towards the end of September, a case of diphtheria was brought into hospital, which proved rapidly fatal, and whose history is instructive from the point of view which I adopt here and at pages 76 and 78. The unusual suddenness of onset is also deserving of notice.

About the middle of September an apprentice on board a ship lying in harbour suffered from "a bad sore throat with some white spots, and swelling of the neck." Nothing particular was done for him and he got well speedily. The captain had a large family of young children on board, and this boy was allowed to play with them while he was still complaining of his throat.

A week after the boy's recovery, a girl aged 10, without any premonitory symptoms, suddenly complained of difficulty in swallowing and in opening her mouth, and it was noticed that the left side of her neck was swollen. Her skin was burning all day. She swallowed nothing, but constantly hawked up stringy mucus. Her breath was offensive. Next day (2nd of the disease) she was brought into hospital, when the following note was taken :—

Very marked swelling, not tender to gentle pressure and not hot, reaching from the left mastoid process vertically downwards to the clavicle. The lower jaw cannot be depressed beyond half an inch without severe pain referred to the middle point of the swelling. Only a very imperfect view of the fauces can be obtained, but the upper border of a white deposit on the tonsils and anterior pillars can be seen. Breath smelling horribly. Voice preserved. Tongue dry in centre. Can swallow nothing.

In the evening the mouth could be opened a little better and it was found that the soft palate was gangrenous. The voice was now hoarse and nasal, respiration was extremely rapid, but there was no dyspnœa. Next morning (3rd day), dyspnœa and retraction of thorax. Tracheotomy under chloroform, the tissues of the neck exuding much serum on section. Respiration was easy from this out. In the afternoon the child was cheerful and drank some milk. On the 4th morning, after an interval of inability to swallow during the night, she could drink freely, and swallowed a considerable quantity of milk and beef juice. At 6.30 A.M. she became unconscious, with blue lips, etc. The canula was clear, but the trachea was full of mucus and serum. This was pumped out with a syringe adapted to an india-rubber drainage tube

introduced through the canula, artificial respiration being meanwhile maintained. Respiration was re-established after about 45 minutes, and there was no further difficulty on this score. The heart gradually failed; quiet unconsciousness set in, broken by occasional short fits of restlessness, and death occurred in the evening.

This history also has a sequel.

A galley boy in the same ship was brought to hospital about a fortnight after the child's death. Three days previously he had been suddenly seized with shivering followed by heat and sweating. Next day (2nd) he complained of severe lumbar pain, the fever persisting, and on the 3rd day swallowing became extremely difficult and painful. On the 4th day he was sent into hospital. His symptoms then were:—Temperature (at noon) 102°.8; sweating profusely; tongue baked along an oblong surface ¾ inch wide, occupying its middle from root to point; pulse soft, full, easily extinguished; breathing 40, extremely superficial; dysphagia. No eruption anywhere on skin; there is a white deposit symmetrically situated on both halves of the soft palate, starting from the base of the uvula. Voice nasal; much irregular swelling of the neck, but no marked or localised tenderness. A very faint trace of albumen in the urine.

The exudation disappeared on the 6th day, but the temperature remained high (maximum, which varied as to the hour, 104°.6) until the 30th day, and defervescence was not final until the 41st. Meanwhile the stools became typhoid in character on the 8th day, and the general symptoms, due possibly to the action of toxines absorbed from the throat, or possibly to extrinsic infection running its course after having first manifested itself by the throat exudation, would, but for the history of the case, have been attributed to a slightly aberrant form of enteric fever. The heart's action became intermittent on the 14th day. The soft palate was partially paralysed on the 19th day, after which there was gradual improvement. The pulse did not become regular until the 34th day. Convalescence was protracted, and the boy was still extremely weak, though otherwise well, when discharged on the 51st day of his disease.

The source of infection in this boy's case is obscure. His work did not carry him near the captain's quarters, which, moreover, had been thoroughly scraped and repainted some weeks before he was attacked, as soon as the nature of the child's illness was known.

In the last week of September two cases occurred at a boarding-school in children aged 11 and 13 respectively, the description of which exactly follows the lines of the first of the series of cases of diphtheria above related (page 78). They were isolated and recovered, the disease not spreading. A few days later a case which proved fatal was admitted to the General Hospital.*

Among the minor affections observed during summer, prickly heat held an important place, notwithstanding its acknowledged benignity, which causes it to be ranked with corns and toothache among annoyances undeserving of serious sympathy. In 1894, however, a large number of cases came under observation in which the intense and persistent tingling induced sleeplessness with consequent general malaise. The treatment which I have always found most useful is a tepid bran bath twice a day, and the avoidance of soap, which should be replaced by raw egg, the whites and yelks of a couple of eggs being mixed thoroughly with the fingers in a

* Out of the large number of cases of diphtheria that I have seen, I have notes of and remember only two (both fatal) in adults, although naturally many adults were engaged in the care of each infantile case. This is merely an additional illustration of the fact already well known, that diphtheria is especially a disease of childhood. But it is interesting to place alongside of this fact the recent observations of WASSERMANN of Berlin, to the effect that the blood of persons who do not contract diphtheria, although constantly exposed to the infection, possesses the property of neutralising 10 times its volume of the diphtheritic toxine.

convenient vessel, and gently rubbed into the skin before entering the bath. Raw egg is as cleansing to the skin as soap, and causes no irritation.

As the summer closed, and cold nights succeeded hot days, inflammatory diarrhœa became extremely prevalent, especially among young children. The disease, however, in most cases yielded readily to treatment, and only three deaths were certified in September as due to intestinal fluxes.

A death from "accidental poisoning" was recorded in August. This was a fatal case of chloroform narcosis and occurred in my practice.

A young German, apparently in perfect health, had arrived in Shanghai direct from Europe a few days previously, with the intention of settling in the interior of China. He had several carious teeth, and these he arranged to have extracted by a local dentist under chloroform. While he was preparing for the operation I asked him whether he had ever taken chloroform before. To this he replied in the negative, adding that he was a very nervous fellow, but that he could not face the pain of tooth extraction without an anæsthetic. After the usual precautions as to loosening his clothes, examining his mouth, etc., he was laid perfectly horizontal in the chair, and the administration of chloroform begun from ESMARCH's open inhaler. He did not struggle, and in about one minute the conjunctivæ were no longer sensitive; I removed the inhaler and three stumps were quickly extracted. The forceps was on the fourth when respiratory movements of the abdomen ceased, the right external carotid artery, which from the position of the head and neck it was particularly easy to observe, continuing to beat forcibly. I caught the tongue and pulled on it rhythmically four or five times, but failing to excite any respiratory movement, I had the patient laid on the floor, and began artificial respiration. The pupils, which were contracted when the operation began, were now widely dilated, and the carotid pulsation had ceased. The face and ears were livid, and death had evidently already occurred. Artificial respiration was, however, kept up without intermission for half an hour, when it was abandoned.

A postmortem examination was made 12 hours after death by Dr. PAULUN. In the lungs there were old cicatrices of small tubercular cavities at both apices; otherwise they were healthy. The heart was healthy. The left ventricle was slightly distended; the right ventricle was empty. Liver, spleen, kidneys healthy. Catarrhal inflammation of stomach and intestines; the stomach walls deeply injected, this condition extending through the duodenum.

The inflamed condition of the stomach and intestine seems to have given rise to no symptoms; at all events the patient had made no complaint of any discomfort.

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LONDON: P. S. KING & SON, 12 AND 14, KING STREET, WESTMINSTER, S.W.
1896.

[*Price* $1.]

INSPECTOR GENERAL'S CIRCULAR No. 19 OF 1870.

INSPECTORATE GENERAL OF CUSTOMS,

PEKING, 31st *December* 1870.

SIR,

1.—IT has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—.

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to { Season. / Alteration in local conditions—such as drainage, etc. / Alteration in climatic conditions. }

e.—Peculiar diseases; especially leprosy.

f.—Epidemics { Absence or presence. / Causes. / Course and treatment. / Fatality. }

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking.

* * * * *

3.—Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr. ....., and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 30th September—that is, for the Winter and Summer seasons.

4.— * * * * *

I am, etc.,

(Signed) ROBERT HART,
I. G.

THE COMMISSIONERS OF CUSTOMS,—*Newchwang*, *Tientsin*, *Chefoo*, *Hankow*, *Kiukiang*, *Chinkiang*, *Shanghai*, *Ningpo*, *Foochow*, *Amoy*, *Swatow*, and *Canton*.

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DR. C. C. DE BURGH DALY'S REPORT ON THE HEALTH OF NEWCHWANG

For the Year ended 31st March 1895.

THERE have been six births (one still-born) and three deaths,

The general health of the foreign residents during the period under review was far from satisfactory. In my last Report I drew attention to the insanitary conditions existing here, and more especially to the ever-present danger of the food supply being contaminated; and I now have to report that, as a result of our insanitary surroundings, there has been a serious outbreak of specific febrile diseases.

In the short space of a few months the following cases occurred:—

Whooping-cough, 22; roseola, 2; scarlet fever, 3; sore throats (scarlet fever?), 4; chicken-pox, 6; enteric fever, 4; and an obscure fever of a typhoid nature, 4.

Complete recovery took place in all these cases, with one exception—a case of typhoid.

The patient, a Tidewaiter in the Imperial Maritime Customs, was apparently passing safely through the critical period when acute ulceration of the epiglottis and neighbouring structures occurred, absolutely preventing him swallowing any food, and producing great distress in breathing. Exhaustion rapidly followed, causing death in a few days' time after the onset of this symptom.

One life lost. How many more will be thrown away before the residents realise that it is not always safe to drink water and milk containing fæcal matter?

A fever occurs in this province which continues to puzzle all the medical men who have come across it. Simple continued fever without any other symptom is the only description one can give of it. The temperature rises to 103°, 104°, or 105°, with a drop of from 1° to 2° during the 24 hours. There are no other indications to guide one as to the nature of the poison. There is complete absence of abdominal symptoms, and even with a continued high temperature extending over weeks, delirium, or anything approaching the typhoid condition, is absent, and the patients generally feel comfortable, are able to take plenty of nourishment, and sleep well. Quinine, antipyrin, and many other remedies have been tried without producing any permanent beneficial effect, and I have come to the conclusion that absolute rest in bed, strict dieting, and a dose of calomel at the onset, and occasionally afterwards, if required, is the best course of treatment to adopt; in short, treat it as if it might be typhoid fever. Up to the present I have not heard of a fatal case occurring among foreigners. The duration of the fever is very variable; some cases last only 7 or 14 days, others from 3 to 11 weeks.

The fatal case of cholera was that of an officer of a steamer which arrived here from Tientsin, at which port the disease was undoubtedly contracted. I did not see him for some 36 hours after the onset of the attack. By that time he was in a condition of collapse consequent on the violent purging and vomiting.

It is of interest to note with reference to this case that on the day before I saw him the excreta were being thrown into the waters of the harbour, and at the same time most probably this polluted water was being pumped into the tanks of other steamers.

In addition to the two fatal cases recorded above, one infant, a few days old, died of general inanition.

The period under review has been eventful. In the summer floods occurred; in the autumn war broke out and slowly approached these districts; in the winter battles were fought at short distances from this port, and consequently, with the approval of the native authorities, gained by the help of the Commissioner, a Red Cross Hospital was opened, into which over 900 wounded Chinese soldiers were admitted.

DR. J. H. LOWRY'S REPORT ON THE HEALTH OF WENCHOW

For the Half-year ended 31st March 1895.

THE health of foreigners during the past half-year has been fairly good. One birth (still-born) and one death have to be recorded. From December to March a severe epidemic of small-pox prevailed in the city and suburbs; the mortality is said to have been very high, chiefly among children, but towards the end of the epidemic adults of both sexes were attacked. It is impossible, as I have found at other ports, to get any reliable information as to the death rate. During the outbreak of bubonic plague at Pakhoi in 1882 I found by inquiring at the coffin shops I was able to make a fair estimate, but here, in a much larger city, this means is not reliable. I have inquired at the Magistrate's yamên, and though that office keeps no official record, it estimates that 4,000 persons died from small-pox. I think, however, from other sources I am justified in stating that about 2,000 died, including adults and children. Strange to say, during December and January an epidemic of measles was also prevalent.

One European, a priest of the Lazarist Mission, contracted small-pox while ministering to some of his folk suffering from the disease. His case ran a simple course and was of the discrete variety. There were no complications and there was no subsequent disfigurement.

In November a case of bubonic plague was discovered by Dr. HOGG on board a steamer that entered from Amoy. The man was not landed, and died after the ship left the port.

The European death above referred to was the result of sprue or psilosis, the subject being a lady who had long suffered from the disease. She contracted it in 1890 at Canton, went to England from there in the same year and was under the care of Dr. THIN, of London, until the autumn of 1893, when she returned to China and placed herself under the treatment of Mr. PETER SYS, of Shanghai. In July 1894 she came under my care, but in spite of every form of treatment the disease made steady headway, and she died in February of this year.

Sprue or psilosis is one of the most formidable tropical diseases we have to deal with. Many of the cases, if taken in time, *i.e.*, sent to Europe and put on strict diet (milk), do well and recover; but again we have them like the case so recently under my observation, where, in spite of change of climate, diet, hygiene, and drugs, the disease makes steady progress to the end.

Dr. THIN'S researches on the disease are and have been very valuable. Sir JOSEPH FAYRER, in his recent article on "Tropical Diarrhœa" in DAVIDSON'S *Hygiene and Diseases of Warm Climates* (1893), classifies sprue under this heading, and Dr. BEGG, of Hankow, claims that it should be the same *—not a distinct disease. All, I think, agree that there is some special organism at work in the intestinal tract, how brought about we are not positive. Dr. BEGG'S lines of treatment are, I think, right, but so far we have not enough proof that santonin is the drug. My patient was twice put under the treatment suggested by Dr. BEGG, dose and *régime* being followed out exactly. It is true, however, that that treatment was only tried late in the disease, when atrophy had set in and intestinal digestion had long since

* Customs *Medical Reports*, xxxiv.

ceased. The extreme emaciation and night sweats of my patient reminded me much of phthisis, but in the sprue case there was the absence of cough and sputa—replaced by the frequent bowel purging and sore tongue.

A case of puerperal eclampsia occurred in a European, and, though not due in any way to climatic causes, is worthy of mention.

X., a multipara whose confinement was due in three weeks, was suddenly seized on the night of 5th November with eclampsia; unconsciousness followed. Under chloroform the convulsions ceased towards morning, but on the night of the 6th recurred. On the 7th she was free from them, but was still comatose, and during the evening of the same day she was painlessly delivered, without assistance, of a still-born child. Consciousness slowly returned after the birth of the child, there was no recurrence of the convulsions, and the patient made a slow but good recovery. There was no history of kidney trouble, though during September swelled legs and feet had been noticed, which I at the time put down to uterine pressure. As there was nothing to indicate that the eclampsia was due to uræmic poisoning, it was treated on the lines that the disease was a purely functional affection or acute peripheral epilepsy, the administration of chloroform being supplemented by chloral and bromide in moderate doses.

It is hoped that the pathology of this disease will soon be cleared up, considering the high mortality. SPIEGELBERG says that out of every three or four women attacked one dies. I am deeply indebted to Dr. HOGG, of this port, for valuable assistance in the above case.

Measles occurred in a European child, æt. 3. The rash was more profuse and extensive than is usually observed in the European variety, and a flea-bitten appearance of the skin was noticed in some regions. The highest temperature was 103°.2, and there was no fall on the appearance of the eruption. The fever assumed a remittent type all through. The rash did not finally disappear until the 10th day. Itching and tingling were intense from the first—preventing sleep.

The diseases that I have observed and treated during the past six months have been:—

Conjunctivitis.	Remittent fever.
Ecchymosis of conjunctiva.	Ruteola.
Hæmoptysis.	Sprue or psilosis.
Hæmorrhoids.	Tonsillitis.
Lymphadenitis.	Variola.
Puerperal eclampsia.	

I append an abstract from the Customs meteorological observations taken at this port.

METEOROLOGICAL TABLE, October 1894 to March 1895.

MONTH.	Highest Reading of Barometer.	Highest Day Reading of Thermometer.	RAINFALL.		REMARKS.
			No. of Days.	Quantity.	
1894.	*Inches.*	° *F.*		*Inches.*	
October	30.270	84	8	3.40	
November	30.400	73	9	0.80	
December	30.540	66	8	0.64	
1895.					
January	30.450	65	13	0.91	Hail and snow, 12th January; 1 inch of snow, 14th January.
February	30.450	66	11	3.49	
March	30.480	75	14	4.21	Thunder, lightning, rain, hail, and snow, 17th March.

Dr. T. RENNIE'S REPORT ON THE HEALTH OF FOOCHOW

For the Eighteen Months ended 31st March 1895.

In my Report for the preceding six months I mentioned that towards the end of September 1893 I had met with several cases of influenza among Europeans and natives. This subsequently proved to be the commencement of an epidemic. In October principally, and before the end of the year, there were no fewer than 60 cases of epidemic influenza among the foreign community. Of these, 19 cases occurred in one compound. The symptoms in all were well marked. The disease was ushered in by a sudden chill or rigor; sometimes simultaneously, but more frequently later, there was sneezing with slight discharge from the nose. The ocular disturbance was confined to slight conjunctival irritation. The fauces became affected, followed by an irritating cough. Severe depression of strength and headache, with pains in back and limbs, were marked from the first, and soon increasing prostration caused the sufferer to go to bed, however strong the desire to keep up. In all, fever, remittent in type, ranging in the course of the 24 hours from 99° to 103°, was present. The pulse was small and weak. The tongue was thickly coated and the appetite entirely gone. No rash or skin affection was observed. At the end of from 24 to 76 hours the pyrexia quickly subsided, and here, excepting much debility and a cough which lasted for some days, the attack in the majority of cases passed off.

Sequelæ and complications occurred in 25 of the sufferers. In 17 cases diarrhœa supervened as a complication. Two of these were confined to bed with a subacute affection of several joints, whilst another was laid up for a month with muscular pains. Two children, well advanced in convalescence, suffered from dysentery of a most obstinate and intractable nature.

In a missionary lady who had recently arrived from the country in a greatly debilitated condition influenza was complicated with pneumonia. Premature confinement, about the end of the seventh month, occurred, and death, by failure of the heart, on the following day was the result.

In an elderly obese lady, who had for many years suffered from symptoms of fatty degeneration of the heart, broncho-pneumonia set in and caused death.

In October and November in six mission schools about one-sixth of the pupils were laid up with influenza. A good deal was heard of the presence of the disease in the city; but beyond the school children and a few cases of bronchial catarrh and pneumonia, the sequelæ of influenza, which came to the native hospital for treatment, I saw nothing further of the disease among the natives. On inquiry, the Chinese death rate did not seem to be much increased.

Influenza next made its appearance in the winter of 1894. Few Foreign residents were affected, but the type was severe and marked by acute pharyngitis. The intense prostration of the disease, with pharyngitis which extended to the larynx, well nigh proved serious to an elderly adult. At the time this form of influenza was very prevalent among natives. I treated several well-to-do Chinese, who thought their malady was diphtheria. The pyrexia,

great weakness, and throat symptoms led them, I suppose, to think of the more serious malady; but there was no approach to fibrinous false membrane or enlargement of the cervical glands.

Since the spring of 1890 genuine epidemic influenza has been the chief cause of illness among foreign residents. Like epidemic cholera when it visits us, influenza was first heard of amidst the floating population at Pagoda Anchorage, and seemed to have come coastwise. During May and in the beginning of June 1890 20 per cent. of the foreign community suffered from well-marked symptoms of the disease. In one family of eight members seven became affected; about the same time two-thirds of their domestics also suffered. At some of the missionary schools for native children as many as one-half of the inmates had influenza. The type of the disease was mild; but the debility following even the mildest cases was marked and out of all proportion to the symptoms. Two European male adults suffered from severe neuralgia; but these were the only cases in which sequelæ were met. The weather at the time was mild, the temperature equable, and this might have accounted for the generally favourable course of the malady. By the middle of June the epidemic had passed by and extended itself to the surrounding towns and villages. Towards the end of June several missionaries living up country reported the extension of the disease to their districts and that some of the missionaries themselves had been affected.

The disease is next said to have made its appearance in epidemic form in the winter and spring of 1891. The type was severe and the mortality among natives remarkable. There is no way of arriving at accuracy as to the native death rate; but even as late as the month of May the number of recent graves on the surrounding hills prompted an inquiry into the business of the coffin makers, who reported that their trade had not been so brisk since the summer and autumn epidemic of cholera in 1885.

Influenza was next encountered among the foreign community in January 1892. In a family of five with a foreign servant all were affected. Several of their native domestics also suffered. In another family of four all exhibited distinct symptoms. Beyond these there was only one other well-marked case among foreigners. Every care was taken that the disease should not spread by contact. The inclemency of the weather at the time, by preventing those affected from getting about too soon, not only had a good effect in checking extension of the malady, but, in all likelihood, prevented complications. Among natives the disease was not very noticeable.

The above has so far been my experience of the disease as it occurred here. It evidently came from without, in several instances proved to be of a very infectious nature, and travelled inland.

In the winter and spring of 1894 a severe type of whooping-cough went the round of the foreign children. One European adult suffered severely. In this patient and two of the older children the cough, notwithstanding the warm summer, did not lose its paroxysmal character till the following autumn.

Succeeding the first rains of the season, in February, I met with seven well-defined cases of typhoid fever. In two of these there were relapses, but all recovered. Last autumn and winter other five cases of typhoid fever came under treatment.

One of these occurred in a male adult over 40 years of age, who had previously suffered for many years from sprue. This patient had in the course of the fever three severe hæmorrhages from the bowel, accompanied by collapse, was confined to his house for four months, but made a good recovery.

Another case of this series occurred in an elderly missionary. He was taken ill up country, and I saw him for the first time when he was moribund. Insufficient nourishment when ill and the long, trying journey to the port doubtless conduced to a fatal termination.

Excepting in the month of June 1894, characterised by hot nights and damp, muggy days, when 12 cases of dysentery were encountered, the ordinary climatic and bowel affections among Europeans were less frequent than usual.

Besides influenza, typhoid fever prevailed extensively among natives. Measles, whooping-cough, mumps, and small-pox were also very prevalent during both cold seasons.

Nothing of the nature of cholera occurred.

Early in the summer of 1894 rumours got abroad that bubonic plague had reached the port; but at the time natives were unusually free from disease, and information from the best possible sources proved the rumours to be false.

In the beginning of June, owing to the prevalence of plague in Hongkong, precautions similar to those adopted in Shanghai were taken against the possibility of plague being brought into this port by foreign vessels coming from Hongkong and Canton. Whilst these precautions were in force no person with suspicious symptoms came under the notice of the inspecting medical officer. In September the sanitary precautions were rescinded.

During the period reported on the average number of foreign residents in the port and surrounding country was 370. Among them there were 17 births and 8 deaths.

In a case of twins one of the infants was still-born.

The causes of death were as follows:—

(1.) Influenza, pneumonia, premature confinement, with sudden failure of the heart.
(2.) Influenza, broncho-pneumonia, fatty degeneration of the heart.
(3.) Accidental death by a fall from a verandah, which caused fracture of the base of the skull and other injuries.
(4.) Heat apoplexy in an old resident, aged 62, the subject of fatty degeneration of the heart.
(5.) Infantile diarrhœa in a hand-fed infant aged 6 months.
(6.) Accidental death by drowning.
(7.) Typhoid fever.
(8.) Malarial anæmia and dysenteric diarrhœa.

Owing to the Customs staff at Pagoda Anchorage having been stationed at Sharp Peak for a portion of the period reported on, I am unable to append the usual table of abstracts from the meteorological observations taken at Pagoda Anchorage.

From approximate meteorological records taken in the Settlement, it would seem that the most remarkable feature was an exceptionally small rainfall. The summer of 1894 had a mean temperature much above the average. Last winter was unusually mild. In March there was a cold burst, and on the 17th snow fell on the surrounding hills. There were no great variations of temperature. No typhoons reached us, and strong winds were seldom experienced.

RAPPORT MÉDICAL

POUR L'ANNÉE FINISSANT LE 31 MARS 1895, SUR LA SITUATION SANITAIRE DE MENGTSZ,

Par le Docteur J. L. MICHOUD.

LE défaut de toute pratique médicale, auquel je n'ai pu, malgré tous mes efforts, remédier, depuis mon arrivée à Mengtsz, m'oblige à prévenir quiconque lira ces lignes de l'insignifiance scientifique du présent Rapport.

Appelé de par mes fonctions de médecin du poste douanier de Mengtsz à rédiger un compte-rendu semi-annuel de la situation sanitaire de la région où je suis supposé exercer ma profession, j'aurai complu à cette obligation, dans les limites du possible, lorsque j'aurai relevé les quelques particularités notoires qui se sont produites dans la constitution médicale de l'année qui s'est écoulée du 1 avril 1894 au 31 mars 1895.

Mon précédent Rapport (1893-94) s'est suffisamment appesanti sur les conditions climatiques, saisonnières de Mengtsz, sur l'hygiène et la nosologie des populations qui habitent ce district, pour qu'il soit inutile de revenir aujourd'hui sur ces questions.

La peste de 1894 (mai, juin, juillet et août) a fait ses ravages habituels. Une des premières victimes fut le "t'ing-ch'ai" de la Douane. Malgré l'administration, dès le premier jour de la maladie, du remède préconisé par les missionaires (0.10 centigrammes d'émétique), remède souverain, d'après eux, les grands symptômes de la maladie se développèrent rapidement, et cinq à six jours suffirent pour emporter le malade. La marche de l'épidémie fut la même que durant les précédentes années, le quartier de la ville le plus éprouvé étant, comme d'habitude, le quartier ouest, le plus proche du cimetière. Les travaux d'assainissement, canaux d'écoulement entourant la cité, effectués par le "Chên-t'ai" ne produisirent pas tous les bons effets qu'on pouvait espérer. Il est vrai que ces travaux furent incomplets et exécutés de la façon la plus primitive.

La variole, que l'on n'avait pas vue depuis plusieurs années à Mengtsz, a refait son apparition pendant l'hiver 1894-95, sans cependant revêtir des formes bien graves, car peu de malades succombèrent. Au déclin de l'épidémie toutefois un certain nombre de décès furent signalés, occasionnés peut-être par le manque de soins, la confiance que les natifs semblaient avoir mise en la bénignité de la maladie.

La santé des membres de la communauté européenne de Mengtsz s'est maintenue bonne, sans qu'il soit possible néanmoins de la qualifier de parfaite.

S'il est difficile de reprocher au climat de Mengtsz son insalubrité, insalubrité relative car elle ne semble guère avoir effet que sur la population indigène, nous devons bien dire cependant que les conditions de l'existence, dans ce coin isolé du monde, sont assez défectueuses pour que

des Européens aient à souffrir d'un séjour prolongé au delà de deux années. Tout être doit à la Providence un ensemble d'attributs naturels dont la libre jouissance est nécessaire sinon à son existence du moins à l'harmonie, l'équilibre de ses facultés physiques ou morales, au maintien de son bien-être. L'homme est essentiellement sociable et l'exercice de cet attribut de sociabilité est indispensable à sa santé morale. Pour qu'il puisse exercer librement cet attribut, il lui faut rencontrer chez les autres hommes avec lesquels le sort le met en contact, à défaut de communauté de race, d'origine, tout au moins communauté de langage, de mœurs, d'idées générales. Tout départ longtemps prolongé de ces conditions naturelles d'existence altère le niveau intellectuel et moral de l'individu qui s'y trouve soumis. Point n'est besoin d'un isolement absolu, de la solitude de l'ermite des premiers temps de l'ère chrétienne, pour amener ces perturbations dans le cerveau de l'être humain. L'isolement relatif dans lequel se trouve jetée une poignée d'Européens, appelés à résider pendant de longues années parfois, dans quelque coin perdu de la Chine, au milieu de populations dont la langue, les coutumes, les idées leur sont souvent totalement étrangères, n'est que trop suffisant pour déterminer des troubles profonds dans la santé morale d'êtres ainsi reclus.

Aussi m'appuierai-je sur cet argument, que soutient le plus élémentaire bon sens, pour demander que la période de séjour imposée aux employés du Service des Douanes chinoises à Mengtsz soit limitée à deux années.

DR. C. C. DE BURGH DALY'S REPORT ON THE HEALTH OF NEWCHWANG

For the Half-year ended 30th September 1895.

THERE have been two births and no deaths.

The health of the European residents during the period under review has been excellent.

There is absolutely nothing of interest to record with regard to Europeans, with the exception of the immunity they enjoyed from choleraic attacks during an epidemic among the Chinese and Japanese.

From widely distant parts of the province reports have come to hand of a serious epidemic of cholera, which proved very fatal to numbers of Japanese and Chinese. The disease was prevalent among the native residents in this town, but was not epidemic to any serious extent.

Whether this disease was true Asiatic cholera or severe choleraic diarrhœa it is difficult to say. Personally, I am inclined to believe it was the latter, as indulgence in fruit, ripe or unripe, followed by a chill, seems to have been the determining cause in most of the cases. At the same time, as I have before pointed out, the water supply is a constant danger, and all water-borne diseases are given every chance of becoming widely spread.

Fouled food has in the past cost many lives in this small community, and will cost many more unless the residents take the necessary steps to obtain control over the water, milk, meat, and general food supply.

Meanwhile, until this is accomplished, it behoves every resident to adhere strictly to the following simple rules:—

1. Boil the water.
2. Boil or, better still, sterilise the milk.
3. Eat sparingly of fruit, avoiding water melons.
4. Keep the abdominal organs warm.

Dr. E. W. VON TUNZELMANN'S REPORT ON THE HEALTH OF CHEFOO

For the Year ended 30th September 1895.

The winter of 1894–95 was exceptionally severe, especially during the later months, the inner harbour being frozen solidly across for some weeks, and the outer anchorage blocked with masses of ice, which were bound together by a thin ice film, when the weather was calm enough to allow this to form. During the first half of the period under consideration the health of the community was very good, there being no serious cases of illness and no deaths. The summer of 1895 was unusually cool and wet, a great deal of rain having fallen in July and August. The health of the Chefoo residents has been nearly as good as during the winter, for there were only 92 cases of sickness during the second half of the year, as compared with 84 during the first half; the slight increase was due to bowel complaints, and of these, two ended fatally. In the native town, however, the summer has been very unhealthy; the mortality in July is usually pretty high, mostly from various bowel complaints, due largely to the excessive consumption of unripe and of damaged melons and other fruits, as well as to the very inferior quality of the water supply. The native town is entirely dependent for its water upon shallow surface wells, all of which are probably contaminated with sewage and filth of every description. This summer the mortality was exceptionally high, and in many cases death occurred so speedily as to suggest that they were due to Asiatic cholera; however, the cases seen at the missionary dispensaries were nearly all of a non-specific character, choleraic diarrhœa, dysentery, and the like. A severe outbreak of choleraic diarrhœa occurred on board two Russian men-of-war; four cases were sent one night to the General Hospital, of which three died before morning, and several deaths occurred on board. These ships shifted berth over to the lighthouse island, where the men were landed and the vessels disinfected. An inquiry was subsequently held, and the disease officially stated to be choleraic diarrhœa, not Asiatic cholera.

Several vessels of the French squadron had outbreaks of severe and fatal forms of bowel complaints among their crews; one ship suffered so much that she also was sent over to the island, where the crew was landed and the vessel disinfected. Most of the worst cases were sent to the General Hospital, and many arrived in a dying condition. This was a very trying addition to the work of the nursing sisters, who were already exerting themselves beyond their strength, as the hospital for many weeks was crowded to its utmost capacity. The removal of these dying men to the hospital secured for them a euthanasia impossible in a crowded ship, and enabled the last rites of the church to be administered to them in comfort. After the stress of the work was over two of these nursing sisters succumbed to acute dysentery; one died, and one is slowly regaining her health, after a long and very severe illness.

CUSTOMS STAFF.

OCTOBER 1894 TO MARCH 1895.

DISEASE.	ADULTS.		CHILDREN.		TOTAL.
	Male.	Female.	Male.	Female.	
Bronchial catarrh	2	...	...	...	2
Sore throat	...	1	...	...	1
Dyspepsia	4	2	...	...	6
Diarrhœa	...	1	...	...	1
Hæmorrhoids	1	...	...	...	1
Varicose veins	1	...	...	...	1
Eczema	...	...	1	...	1
Purpura	...	...	1	...	1
Peripheral neuritis	1	...	...	...	1
Venereal disease	1	...	...	...	1
Fever, intermittent	2	...	...	...	2
„ remittent	...	1	...	...	1
Vulvitis	...	...	...	1	1
Rheumatism, chronic	1	...	...	...	1
Anæmia	...	1	...	...	1
Wound	1	...	...	...	1
Sprain	1	...	...	...	1
Abscess, boils	...	1	2	...	3
TOTAL	15	7	4	1	27

APRIL TO SEPTEMBER 1895.

DISEASE.	ADULTS.		CHILDREN.		TOTAL.
	Male.	Female.	Male.	Female.	
Bronchial catarrh	...	1	...	...	1
Sore throat	1	...	...	...	1
Dyspepsia	5	1	...	...	6
Diarrhœa, acute catarrhal	...	2	1	1	4
„ subacute catarrhal	3	1	...	...	4
„ dysenteric	1	...	...	...	1
„ choleraic	1	...	...	...	1
Dysentery, acute	...	...	1	...	1
Neuralgia	2	1	...	...	3
Febricula	...	...	1	...	1
Urticaria	...	...	1	...	1
Venereal disease	3	...	...	...	3
Fever, intermittent	4	...	...	...	4
Diseases peculiar to women.	...	2	...	...	2
Lumbago	...	1	...	...	1
Lymphangitis (leg)	1	...	...	...	1
Catarrhal conjunctivitis.	1	...	...	...	1
Abscess	1	...	...	...	1
TOTAL	23	9	4	1	37

During the first six months' period four members of the out-door Customs staff were on the sick list for 56, 8, 4, and 9 days, suffering respectively from intermittent fever, chronic rheumatism, sprain, and peripheral neuritis (malarial).

During the second six months' period 10 of the out-door Customs staff were on the sick list. Of these, one died; five had intermittent fever and were on the list for 21, 20, 4, 8, and 7 days respectively; two had orchitis for 4 and 9 days respectively; one had lymphangitis of the leg for 7 days; and one, dyspepsia e potu for 3 days. The fatal case was that of our late Harbour Master, a universally esteemed and much regretted member of the community.

Though only 59 years of age, he appeared older, his arteries being extensively atheromatous, rigid, with visible pulsation. He was bowed, with white hair, lungs emphysematous, and heart dilated, results of the winter cough from which he had suffered during several years. On 22nd July he had a sharp attack of choleraic diarrhœa, which was speedily checked, the vomiting and diarrhœa having completely ceased next day; but the violent vomiting had produced a large inguinal hernia on the right side, easily reduced but returning immediately. He kept his bed for a few days, and then the couch, waiting for a truss to arrive from Shanghai. On 1st August he complained of loss of appetite and slight diarrhœa. The latter, temporarily checked by a bismuth mixture, recurred on the 6th, when it was again stopped by the same means; but there was progressive failure of strength, and about midnight on the 6th he died quietly in his sleep.

Of the intermittent fever cases, one was that of an officer of the *Newchwang* lightship. His habits as regards alcohol had long been indiscreet, and he first came under treatment for profound anorexia and

extreme feebleness, the latter probably due to poisoning by the products of abnormal proteid disintegration; his breath was inexpressibly offensive. In a few days an old malarial taint manifested itself, only to a slight extent, yet enough in his debilitated condition to modify profoundly his consciousness; no doubt his organ of mind had been damaged by a long persistence in unphysiological habits, in spite of his boast that he had hardly ever had a day's sickness. He was treated in the General Hospital for 10 days; his mental confusion and insomnia soon yielded, under careful dieting and abstinence from alcohol, and he was discharged in much improved health.

Another case was that of a Chief Examiner, an elderly man in such a state of health that one day of moderate fever (temperature 102°) reduced him to a critical condition. In his normal condition of health all his organs, the heart in particular, were working to the full extent of their power; being so without reserve, however, if his fever had not promptly yielded to treatment it would have proved fatal.

The wife of one of the members of the Customs staff, four months enceinte, began about 1st July to suffer from very severe vomiting. All the usual therapeutic measures to arrest it were tried without success, the rectal injection of chloral and bromides, which I have rarely known to fail, alone being of any use, and this only temporarily. Finally, on 17th July, after consultation with my friend Dr. DOUTHWAITE, we decided that the production of abortion was necessary. This was effected without difficulty, though the products of conception were not discharged until some weeks had elapsed. The desired effect was produced at once; the vomiting ceased, and the patient speedily regained her normal state of health.

OTHER CHEFOO RESIDENTS.

OCTOBER 1894 TO MARCH 1895.

DISEASE.	ADULTS.		CHILDREN.		TOTAL.
	Male.	Female.	Male.	Female.	
Bronchial catarrh	1	8	2	3	14
Tonsillitis	1	...	...	1	2
Sore throat	3	1	...	...	4
Pleurisy	...	...	1	...	1
Pneumonia	1	...	...	...	1
Dyspepsia	1	1	...	...	2
Dyspepsia e potu	4	...	...	...	4
Diarrhœa, acute catarrhal	2	1	1	...	4
" subacute catarrhal	3	...	...	1	4
Skin diseases	1	...	1	...	2
Neuralgia	1	...	...	...	1
Venereal disease	4	1	...	...	5
Lumbago	1	...	...	...	1
Rheumatism, subacute	...	1	...	...	1
Anæmia	...	5	...	...	5
Varicella	...	...	...	1	1
Abscess, boils	3	...	...	...	3
Catarrhal conjunctivitis	2	...	...	...	2
TOTAL	28	18	5	6	57

APRIL TO SEPTEMBER 1895.

DISEASE.	ADULTS.		CHILDREN.		TOTAL.
	Male.	Female.	Male.	Female.	
Bronchitis, chronic	...	1	...	...	1
Tonsillitis	...	...	1	1	2
Sore throat	1	...	...	...	1
Dyspepsia	2	3	...	...	5
Dyspepsia e potu	2	...	...	...	2
Diarrhœa, acute catarrhal	4	4	2	...	10
" subacute catarrhal	2	...	...	1	3
" dysenteric	...	1	1	...	2
" choleraic	2	1	...	...	3
Cholera	1	...	...	...	1
Dysentery, acute	1	3	...	1	5*
Skin diseases	1	...	1	...	2
Neuralgia	...	3	...	...	3
Sciatica	1	...	...	...	1
Venereal disease	2	...	...	...	2
Fever, intermittent	...	3	1	...	4
Influenza	1	...	...	...	1
Varicella	...	...	...	1	1
Abscess, boils	3	...	...	...	3
Sprains	2	...	...	...	2
Insomnia	...	1	...	...	1
TOTAL	25	20	6	4	55

* 1 death.

Of the cases occurring among the other Chefoo residents, the only one requiring particular mention is that of one of the nursing sisters at the General Hospital.

She was convalescing from a severe attack of dysentery when symptoms of intestinal obstruction suddenly supervened, and concurrently a swelling became sensible over the region of the cæcum; her condition forbade the idea of operation being entertained, and symptomatic treatment only was adopted. There was never any vomiting; she took pancreatised food well; and when a piece of gangrenous gut was discharged and the obstruction ceased, a faint hope of her ultimate recovery was aroused. However, two days later profuse and uncontrollable hæmorrhage came on and speedily proved fatal.

It is fortunate that the supervention of intussusception on a disease in itself so serious as acute dysentery is very uncommon, as such a conjunction is unlikely to prove other than fatal.

Another of the nursing sisters was convalescing from a severe attack of acute dysentery when, on 29th September, a very profuse hæmorrhage from the bowel occurred. This was checked with great difficulty; her pulse ran up to 180, and her condition appeared hopeless for some days. Thanks, however, to assiduous nursing, etc., she is now (1st November) convalescent.

Visitors (Shipping included).

October 1894 to March 1895.

Disease.	Adults.		Children.		Total.
	Male.	Female.	Male.	Female.	
Bronchial catarrh	1	2	...	...	3
Dyspepsia e potu	1	...	...	...	1
Diarrhœa, acute	2	...	...	...	2
" chronic	...	1	...	...	1
Skin diseases	1	...	...	1	2
Heart disease	1	...	...	...	1
Febricula	...	...	...	1	1
Anæmia	...	1	...	...	1
Dental abscess	1	...	...	...	1
Contusions, gun-shot	2	...	...	...	2
Dog-bite	1	...	...	...	1
Total	10	4	...	2	16

April to September 1895.

Disease.	Adults.		Children.		Total.
	Male.	Female.	Male.	Female.	
Bronchitis, acute	...	...	1	...	1
Tonsillitis	1	...	...	...	1
Dyspepsia	1	...	...	...	1
Diarrhœa, acute catarrhal	8	2	5	...	15
" subacute catarrhal	...	3	3	...	6 *
" choleraic	6	...	...	...	6 *
Cholera	1	2	1	...	4 †
Dysentery, acute	...	1	...	...	1
Skin diseases	1	...	1	...	2
Venereal disease	5	...	...	...	5
Rheumatism	3	...	...	...	3
Gout	...	1	...	...	1
Fever, remittent	2	...	...	...	2
" intermittent	...	...	1	...	1
Diseases peculiar to women.	...	1	...	...	1
Eye diseases	3	1	...	...	4
Caries	1	...	...	...	1
Renal colic	1	...	...	...	1
Cystitis	1	...	...	...	1
Febricula	...	...	...	2	2
Typhoid fever	1	...	...	...	1
Wounds and fractures	5	...	1	...	6
Sprains, abscesses, contusions.	4	...	...	...	4
Total	44	11	13	2	70

* 1 death.

† 2 deaths.

Under ordinary circumstances there are but few, if any, visitors in Chefoo during the winter; the small number who wintered here in 1894–95 were mostly refugees from Weihaiwei.

In July the supposed prevalence of cholera in the native town and on the men-of-war caused a panic among the visitors, and would no doubt have induced many to seek safety elsewhere had not the wide prevalence of cholera all over the Far East made it almost impossible to find a spot secure from its ravages. This scare certainly served the useful purpose of inciting everybody to take uncommon precautions, and in consequence the incidence of serious disease upon the foreign community was very slight.

The fatal case of choleraic diarrhœa was that of the captain of a steamer running between Kiukiang and Tientsin.

Shortly after leaving Kiukiang the captain was taken sick with moderately severe diarrhœa and vomiting; he was intelligently treated by his first officer, aided by the little handbook usually carried in the medicine chest, and appeared to be recovering. However, some 24 hours before reaching Chefoo, into which port the steamer put to seek aid, he was taken much worse, and when seen was in the algid state, moribund. He died two hours after arrival in port.

The fatal case of sub-acute diarrhœa was that of a young lady who had been successfully treated in Shanghai for bowel disorder and had come here to recuperate.

Diarrhœa and vomiting, neither very severe, recurred soon after her arrival here, and she and her friends were satisfied to treat these symptoms themselves. They did so, with no great success, for three to four days, when the vomiting of an ascaris lumbricoides convinced them that here lay the *fons et origo* of all the trouble; and they consequently administered worm powders in a way which rapidly reduced her to the last state of exhaustion. When I saw her, after 10 to 11 days of this treatment, she was so exhausted that she could not raise her head from the pillow, nor speak above a whisper; her pulse was imperceptible and her extremities cold. It was the last-stated phenomenon which induced her friends to seek professional aid; and it is a curious instance of the often-observed blindness of people, even sometimes of trained observers, to a condition which has gradually evolved itself under their eyes, that none of the people about her realised in the least the gravity of her condition. The stomach was in an excessively irritable condition; and though one dose of a bismuth mixture allayed this, and enabled her to retain some nourishment, she was too far gone to permit of recovery. Digitaline hypodermically caused only a transient and slight recovery in the pulse, and she died quietly about 12 hours after I first saw her.

An inquest held by the British Consul resulted in the obvious verdict of death from natural causes, together with want of timely medical aid.

The two deaths from cholera were those of a lady from Tientsin and her young son.

She was taken violently ill with vomiting, cramps, and diarrhœa about midnight, and when I saw her, about 10 A.M., was in the algid stage. Frequently repeated doses of ether and strophanthus, together with large tannin enemata, produced a very hopeful rally, but towards evening she again became collapsed, and died early next morning.

On the day of her death her little boy was taken ill about noon. Earlier in the day he had complained of pains in the stomach, but had subsequently eaten a good breakfast, and his complaint was consequently thought nothing of. He was at once removed to the General Hospital and assiduously tended. Nothing, however, availed to stay the vomiting and diarrhœa; collapse soon came on, and he died some 14 hours after the onset of the first serious symptoms.

In the case of the mother, her illness was attributed by the people about her to an extraordinary dietetic indiscretion, but of this there was never any sign in the stools; and the discovery in these, as

well as in scrapings from the soiled sheets, of comma bacilli in profusion established the diagnosis of cholera morbus.

The fact that unboiled water from a well of the usual type, *i.e.*, a surface one, was used in the household affords an adequate explanation of these two cases; and that nobody else in the house suffered must be attributed solely to good luck. Cholera bacilli may be taken into the stomach with impunity if it happen to be in a condition to deal summarily with the invader, but it is dangerous to rely upon such conditions.

As further on I shall have occasion to refer to cases of cholera and choleraic diarrhœa, I may digress to remark that clinically these are hardly distinguishable; though their causes, *i.e.*, the microbes producing them, are different, yet both produce identical morbid conditions, and one fatal case of violent diarrhœa is just like any other in its clinical aspect, whatever be its causation. The one is more often fatal than the other; but they can only be accurately distinguished by the use of the microscope and the incubator, for which, in the rush of practice, there is not always leisure. In the above table the only cases classified as cholera are those in which the characteristic microbes were found; if absent or not searched for the case is classified under the alternative heading.

Some of the cases of acute catarrhal diarrhœa in children were very severe, notably two—such as are commonly designated "infantile cholera."

In one of these cases the onset of the disease was indicated by a violent fit, which alarmed the attendants.

During the year under consideration five children were born at full term, three females and two males; there was one abortion, at the third month, and one premature delivery, at the seventh month. Except in the following instances, labour was natural and recovery took place without incident:—

In one case the breech presented, and the child was born at noon, during my absence at the bedside of a case of cholera. Traction had been made; and I found the arms extended above the head, and the latter also extended, with the chin caught above the pubes. I extracted with forceps, without much difficulty. The child was flaccid and of a dark blue colour; but the heart was beating, and by the customary methods respiration was induced. Two days after birth the baby had a feverish attack for some 20 hours, not above 102°; the navel was dry and healthy, and, failing other cause, I attributed the fever to some slight morbid state of the lungs, consequent on mucus, etc., having been drawn into the bronchi, though no physical signs of any such condition could be detected. The fever soon subsided, and the child is now thriving.

In another case, that of a lady from Taku, a perfectly normal a-febrile recovery took place. 16 days after labour, pain was complained of in one breast; there was a suspicion of induration over a small area, but no fever, and all the symptoms vanished after a few hours' fomenting with hot flannels. On the 19th day pain was again complained of, more severe; the evening temperature rose to 100°.6, and there was distinct tenderness and induration over a limited area. Next day the temperature was normal, morning and evening, and all the symptoms were relieved; and two days after the patient declared herself, and appeared to be, quite well. Four days later she left Chefoo, returning home. I was as much grieved as astonished to hear next spring that she had died in February of septicæmia resulting from abscess of the breast.

One other case, 52 days after her confinement, from which she had made an uneventful recovery, developed a small superficial abscess in one breast, apparently owing to suppuration occurring about an

occluded milk-duct. It opened and discharged spontaneously, being more like a boil than an abscess, and speedily healed completely. However, I advised that the baby be weaned, as there were other indications that this was desirable, or soon would be.

In only one of these five cases has the mother been able to nurse her baby for more than two months, and this one was the only non-European. This is a subject I have alluded to in a previous Report.

For vaccination I now always use Saigon calf lymph and have no failures; when using lymph from England my per-centage of failures was very large.

CHEFOO GENERAL HOSPITAL (FOREIGNERS ONLY), October 1894 to September 1895.

DISEASE.	Number of Cases.	Discharged from Hospital.	Died in Hospital.	DISEASE.	Number of Cases.	Discharged from Hospital.	Died in Hospital.
Bronchitis	6	6	...	Subacute rheumatism	3	3	...
Pneumonia	3	3	...	Cystitis	3	3	...
Pleurisy	1	1	...	Venereal disease	15	15	...
Phthisis	1	...	1	Orchitis	1	1	...
Dysentery, acute	7	5	2	Burn	1	1	...
" chronic	4	4	...	Wounds	3	3	...
Chronic diarrhœa and anæmia	20	19	1	Fracture, compound (bones of leg)	1	1	...
Acute gastro-enteritis	4	4	...	Contusions	2	2	...
Choleraic diarrhœa	7	6	1	Abscesses	6	6	...
Cholera	12	3	9	Inguinal hernia (operation)	1	1	...
Hepatic congestion	3	3	...	Periostitis (tibia)	1	1	...
Bright's disease, chronic	1	...	1	Apoplexy	1	1	...
Heart disease	2	2	...	Sciatica	1	1	...
Malaria	16	15	1	Catarrhal ophthalmia	1	1	...
Typhoid fever	7	6	1	Delirium tremens	1	...	1
Eczema	3	3	...				
Acute rheumatism	1	1	...	TOTAL	139	121	18

The great majority of the hospital cases were those of men from the French squadron.

A large number suffered from a very obstinate form of chronic diarrhœa, usually contracted at Saigon, and in most cases having lasted for several months. An exclusive diet of predigested milk gruel proved extremely successful.

The one fatal case was that of a man who was on the point of leaving the hospital cured when a violent attack of choleraic diarrhœa carried him off. His comrades declared that he had consumed a number of raw apples, smuggled into the hospital—a fact which, if correct, would adequately explain the unhappy event.

Nearly all the cholera cases were admitted in a dying condition, as before mentioned.

In one of these cases I tried as a last resource the intra-venous injection of a quart of normal saline solution. The effect was magical. The man, who had been quite unconscious for the 9 to 10 hours subsequent to leaving his ship, recovered consciousness, expressed himself as being quite comfortable, chatted with the sisters and the other patients, and finally turned on his side and went quietly off to sleep. The alteration in his appearance was no less striking, as his sunken blue cheeks filled out and nearly regained their normal colour, and the icy, clammy limbs grew warm and natural. This improvement, however, only lasted some two hours. He awoke in great discomfort, complained of bitter disappointment, and rapidly sank into a state of collapse which passed into death.

The case of Bright's disease was that of a Russian, who was admitted in a dying condition, water-logged and uræmic.

The fatal case of malaria was admitted in a state of deep coma, with a temperature of 106°. His temperature, by iced baths and antipyretic drugs, was several times reduced to 100°; but he never regained consciousness, and died the day after admission.

With regard to the cases of acute dysentery, it may be of interest to remark that in several I used the powdered ipecacuanha without emetin, but found it so very inferior to the liquid extract of the United States Pharmacopœia, which I usually prefer, that I ultimately ceased using it. In one case, not a hospital one, however, I used Merck's liquid extract without emetin with such success that I intend making further trials next year. The powdered drug seems to act as an irritant. I may observe that in several instances I noted how much superior opium by the mouth, preferably in pill form, is to the hypodermic injection of morphia, for the purpose of checking diarrhœa, helping the retention of ipecacuanha, etc.

The hospital was put at the disposal of the Chinese authorities gratuitously when wounded men were pouring into Chefoo, some new native wards having recently been built; but only seven Chinese wounded, from Weihaiwei, came for treatment, and these were sent in by the Taot'ai. The hospitals of the China Inland Mission, which are better known to the Chinese, absorbed nearly all the cases.

DR. JAMES H. McCARTNEY'S REPORT ON THE HEALTH OF CHUNGKING

For the Year ended 30th September 1895.

CUSTOMS METEOROLOGICAL TABLE, October 1894 to September 1895.

MONTH.	THERMOMETER.				BAROMETER.		RAINFALL.
	Dry Bulb.	Wet Bulb.	Maximum.	Minimum.	Highest.	Lowest.	
1894.	° F.	° F.	° F.	° F.	Inches.	Inches.	Inches.
October	88	87	90	54	29.42	29.02	5.02
November	73	72	76	44	29.62	29.12	0.70
December	63	58	64	43	29.62	29.02	0.92
1895.							
January	58	58	60	39	29.50	29.02	0.26
February	73	70	78	42	29.50	28.94	0.74
March	80	71	84	40	29.50	28.78	1.94
April	101	77	104	53	29.34	28.65	3.35
May	95	78	99	61	29.33	28.92	7.34
June	97	85	97	66	29.19	28.76	5.27
July	93	81	93	66	29.10	28.82	5.11
August	94	84	96	70	29.10	28.86	3.24
September	93	81	92	65	29.36	29.06	2.62

As seen by the above table, our warmest weather was during April and May, the maximum, 104°, being reached in April. Cool and pleasant weather was experienced in July and August, which was unusual for that time of year. During these two months the thermometer never exceeded 96°. The past summer was the driest since the opening of the Customs here, now nearly five years, and the latter six months were the most unhealthy, due, in part at least, to the ladies and children not being allowed, as heretofore, to enjoy the surrounding mountains, owing to the threatening riots.

The principal complaints among the foreign residents during the last six months were dysentery (mostly among children) and *han-ping* (寒病) or remittent fever, the latter being caused by the heat and dryness of the early summer. In the fever cases large doses of quinine, as well as small doses frequently repeated, proved of little value. Usually the pulse stayed at 120 or thereabouts for over two weeks, and the fever was kept down by frequent small doses of antifebrine. After convalescence began, recovery was in each case rapid and complete. One case of dysentery, that of my own wife, proved fatal.

The trouble began in October. After a severe attack lasting two weeks convalescence was established and recovery proceeded slowly for the next fortnight, when, owing to injudicious exercise, a relapse ensued. From that time until her death, which took place in Ichang in January (whither she had been

removed, in the hope that a change would be beneficial), the pulse was only once below 120, and generally registered 130 and over. For more than a month before she died the symptoms were diarrhœal rather than dysenteric in character, with eight or nine stools during the 24 hours. Death was caused by muscular atrophy of the heart.

Two other deaths have to be recorded, one taking place on a boat bound down river, whither the patient was being removed for fear of a riot in Chungking.

Patient No. 2 reached Chungking in March, suffering from valvular disease of the heart, as well as degeneration of its muscular fibres, caused, no doubt, by a syphilitic attack contracted in youth and never properly treated. When first seen he had neither eaten nor slept for several days. Could not sleep owing to dyspnœa; pulse, over 140 per minute. The attack came on while on his way from Ichang to Chungking, travelling alone. At one time convalescence was established, but did not continue long, as the patient contracted dysentery, which proved stubborn to treatment. During the convalescent stage he became demented and remained so for two weeks or more. He was subsequently sent down the river in company with some medical refugees going to Shanghai, but he did not reach Ichang.

The other death was that of a married lady and was caused by heart-clot following labour induced for eclampsia. When taken with the first eclamptic fit she was chloroformed, and dilatation of cervix commenced. Within three hours and a half twin boys were delivered feet first; they had been dead, no doubt, since the first convulsion, asphyxiated by the violent contractions of the abdomen. After delivery the mother regained consciousness and had no return of the eclampsia symptoms. She did well for the first five days, had no fever, the urine cleared up, and she complained of but little pain. On the morning of the 6th day there was a slight rise of temperature, which was soon reduced by full doses of quinine. The 7th day she was a little incoherent in speech, but had no bad symptoms. On the morning of the 8th day I was hastily summoned and found her dying. The attendants reported that her condition had changed suddenly and without any warning. Hence heart-clot was diagnosed.

Several cases of leprosy were encountered during the year. The following are notes of the only case that remained any length of time and that showed the effects of treatment:—

The patient, a farmer residing at a place over 300 *li* from Chungking, first noticed the present trouble several years ago and found that he gradually got worse. The form of leprosy from which he suffered was the anæsthetic. The anæsthesia principally involved the arms, legs, and face. Only on the face were any of the characteristic spots noticeable, and these but faintly. His eyebrows had entirely fallen out, and his lips, eyelids, forehead, and cheeks had that swollen, livid, anæsthetic condition peculiar to this form of leprosy. He was treated with iodide of potassium and gurjun oil, and at the end of a month showed great improvement; the anæsthesia of his face, arms, and legs was not so marked, and he himself seemed much pleased with the treatment. The eyebrows began to grow, and his face lost its former swollen, livid appearance. He has not been heard from since he left the hospital.

My five years' observations of leprosy show that there are no cases in Chungking, but that all the patients come from a district in Yo-ch'ih-hsien (岳池縣), over 300 *li* north-west of Chungking, on the Chia-ling River (嘉陵江). It is said that a large number of lepers live there, and that their fellow-countrymen look upon them as outcasts. When a person is found to have leprosy, a small house is built for him on some hill, and food is daily taken and deposited somewhere near, whence it is fetched by the leper after the bringer has gone. In this way he manages to prolong a miserable existence. I find that leprosy yields to proper treatment if pursued for sufficient time, say a month. The treatment found most satisfactory has been tonics and iodide of potassium, with gurjun oil emulsion as an external application.

I encountered but one case of typhus fever, the first seen in five years.

The patient, a man about 35 years of age, was brought to hospital in a delirious condition by his brother, with a temperature of 104° in the axilla and a very rapid and weak pulse. The same evening he became unconscious and remained so for three days. Milk and beef tea were given by enema, as well as large doses of quinine. The following day the characteristic mulberry eruptions appeared beautifully; the patient regained consciousness; the fever dropped 3°, and never again exceeded 100°.5. Convalescence set in about 10 days later. The treatment, large doses of quinine by enema, had the desired effect.

Injuries arising from foot-binding are very common. The women in this province, and especially in Chungking, bind their feet very tight, much tighter than is commonly observed in other parts down river. The practice, too, is more general, for the very poor as well as the farming community bind, and seem to regard large feet as reproachfully as would persons of the wealthy class. On close questioning, not one woman in a hundred will say that she is not a constant sufferer, owing to the tight bandages. Many foreigners in China imagine that after a woman reaches maturity she is free from pain, but this is by no means the case. I have failed to find one elderly woman (say 60 or 70 years of age) who did not complain of pain. Women with bound feet cannot stand for any length of time without undergoing great suffering, not to mention the agony endured during the early period of binding. Foot-binding very often causes paralysis of the legs, and in every case I found that the patient rapidly recovered when her feet were unbound and left so, aided by frequent bathing and electrical treatment. As the result of foot-binding, ulcers and eczema are very common, not only among the poor, but also among the wealthy and official classes. I have met with several cases of gangrene of the toes, and one case of gangrene of both feet, which were subsequently amputated. In two other cases nature had amputated both feet, after gangrene caused by tight bandaging.

During my residence here I have seen but three cases of stone in the bladder, two of these (both for operation) presenting themselves this year.

Case 1.—Patient, 56 years of age, is a literary man (second degree) from a place in the Kweichow (貴州) province, near the border of Kwangsi (廣西). Married, with several children. Present trouble began about two years ago; since then he has been in constant agony during micturition, but not entirely free at other times. A large stone was diagnosed, and after the ordinary preparation it was removed by a left lateral perineal operation, which only occupied about 10 minutes. The stone was readily grasped and removed; it weighed $1\frac{3}{4}$ ounces, and measured $2\frac{1}{4}$ inches by $1\frac{1}{2}$ inches. No hæmorrhage followed. The bladder was washed with boracic acid solution and the ordinary treatment followed out, with the exception that no lithotomy tube was used. The patient had no rise of temperature until the third week, when it reached 103°; on investigation, it was found to be due to malaria, caused by the excavation of earth near his room. On removal to another room the fever soon left him and did not return. Discharged cured in five weeks.

Case 2.—Male; married; 61 years of age. Present trouble began about two years ago. When first seen he was suffering much pain, not only during micturition but at other times also, caused by inflammation of the bladder. This case is interesting from the fact that the calculi were formed by the presence of a red pepper $1\frac{1}{2}$ inches in length in the bladder (probably the first case on record). Here the left lateral operation was also performed, and three stones were removed, two of which were attached to the red pepper, one at each end. The weight of the stones was 152 grains. The pepper was broken during the extraction, but otherwise presented a natural appearance; it was well preserved and looked

as though it might have been there but a few days. Patient could give no history of its presence. The Chinese theory is that the man swallowed the pepper and in some way it got into the bladder. I thought that it might have been slipped into the urethra during childhood and subsequently forgotten, or been used as a kind of suppository for the cure of disease and accidentally slipped in. However, this is mere conjecture. It is now 10 days since the operation, and the patient is doing well.

I have performed over 100 major operations. The following case is worthy of record as illustrating the exceptionally rapid growth of an enormous tumour and its peculiar location.

Patient is a business man of middle age; single. About five months previous he noticed a slight lump on the inner aspect of the right thigh, which rapidly increased in size. It gave him no pain, but it was so large that he could not walk with comfort. The growth extended the whole length of the thigh, and I diagnosed aneurism of femoral artery; but every attempt at diagnosis only gave negative results. He was put under chloroform and an incision parallel to the axis of the growth was made over the most prominent portion. When the incision was carried through the muscle, no sooner were the bands which bound it down loosened than the projecting portion of the tumour protruded, and I discovered a lipoma (脂瘤). It peeled out of its fibrous capsule without any trouble; in fact, as soon as the capsule retaining it was incised, it came out by itself. It weighed over 100 ounces.

DR. E. RUEL JELLISON'S REPORT ON THE HEALTH OF WUHU

For the Half-year ended 30th September 1895.

TAKING the sick list as a criterion, Wuhu appears to be a very desirable city for residence purposes. To be sure, there are some who find it impossible to live in Wuhu, but the deleterious influence—whatever it is—acts in a very pointed and extremely rapid manner. We may call the fevers which are prevalent here Wuhu fever or malarial fever or miasmatic fever, but it is rare to find a person who does not suffer occasionally from mild attacks. Some readily yield to a 10-grain dose of quinine, while others persist for days, and it may be for weeks, before the system returns to its normal temperature. Protean are the symptoms ascribed to malaria. One symptom more especially noticed here is a dull, throbbing or lancinating pain in the occipital region. Combined with it is a feeling of languor and a distaste for mental work. This sometimes develops into a positive inability to do any severe mental labour, such as studying Chinese or performing the ordinary duties of a clergyman. One patient continually suffered from headache, which was completely relieved by a trip to Chefoo; but the return to Wuhu has been followed by a recrudescence of the pain in as severe a form as before.

One of the Customs staff was attacked by typho-malarial fever and suffered for four weeks with an increase of temperature. Recovery was complete under a simple treatment of mild doses of quinine to control the temperature, which never exceeded 104° F., and chlorodyne to control the bowels. There were from 4 to 12 motions a day, often accompanied by pain.

There was one case of congestive malarial chills, as severe as any I have seen in China.

The patient had had an ordinary ague chill every other day, or at intervals not exceeding four days, for more than a year. During this time he had taken pinches of quinine—probably about 1 or 2 grains at a dose—with little or no effect. I was suddenly called to his bedside to find him in high fever with delirium and suffering from an intense pain in the abdomen. The extremities were cold, and he continued in this condition from noon until 6 P.M. I administered 40 grains of quinine between 3 and 6 P.M. For five days he took 30 grains daily and had a slight rigor each day. I ordered him to Japan, but he went on a trip up the river in a houseboat and had another chill, which lasted six hours, retaining, however, his consciousness during the time. He returned at once to Wuhu and concluded to go to Japan. A three months' residence at Suma restored him to health, with the exception of a continual dull headache.

These are the worst cases I have seen in Wuhu, and I conclude we must be as free from fever as any port on the River Yangtze.

It might be interesting to notice some of the effects of passion on the health of the Chinese.

Some time ago I was called to see an old man who could not properly attend to the ordinary business which he had conducted for many years. It came out in the examination of his case that the friends ascribed his trouble to worry over the blighted careers of his two sons: one had been sent to school for many years and had always failed to pass his examination for a degree; the other had been

started in business, but had been compelled to close his door and make an assignment for the benefit of his creditors. Over these two failures the old man worried himself into a mild and harmless attack of melancholia. I put him on a protracted course of bromide of potash and in a month he was completely cured.

Another common result of worry in a Chinaman is hæmoptysis.

A young man of previous perfect health, as far as the lungs are concerned, went to a neighbouring city to begin business. While waiting for the completion of his office he became very impatient and anxious about his future. A sudden hæmoptysis occurred, in which he lost a ricebowlful of blood. In a few days he had another; and on examination of his chest I found pain in the right sub-clavicular region. There was also dulness on percussion and slight bronchial respiration. I have followed his case since, and he has had several attacks of hæmoptysis and a continual cough. Emaciation has become extreme, and although he was fat and strong a year ago he is a weak, spare man now. The larynx has lost its tone, and the voice is very husky. There is no tuberculosis in the family, and I think the cause of his trouble must have been the anxiety over his affairs.

One day a girl with an enlargement of the thyroid gland was brought to my consultation-room by her mother. The history of the case was not long, as the swelling began the day before. The mother had punished the girl, who was about 17 years of age; the girl flew into a most violent passion, and the neck swelled up during the few moments in which she was so mad. The anger being so closely connected with the swelling in point of time makes it more than probable that it was the direct cause of the goitre.

As an illustration of the malpraxis of the Chinese midwives might be mentioned the following:—

A woman was brought to the hospital in her third day of labour. She was a very muscular subject and had several children. The present birth was a shoulder presentation. A midwife had been called and had amputated the arm and made some incisions, through which the lung of the child protruded. The vulva was swollen to the size of a child's head. Chloroform was administered and I completed the division of the body into halves, removing the pieces by traction. The case would have done well had not the vagina and vulva been so bruised by the manipulations of the midwife that they sloughed entirely away and left the rectum protruding from a mass of ulcerating tissue. Part of the bladder also sloughed, and the patient died of exhaustion three weeks after delivery. Version could easily have been performed in the first stage, and saved the mother and perhaps the child. In such cases version is an easy operation among the Chinese, as they are so roomy and resilient.

The Chinese suffer a great deal from lung disease and often develop fistulæ in ano during the course of the disease. Some notes on cases operated, where there had been cough with hæmoptysis and asthma, may be of interest; the cases were treated in the Wuhu General Hospital.

CASE I.—CHAO A; native of Ho-fei-hsien, in Anhwei province; 23 years of age. A student and extremely emaciated. He had coughed for five years. Had hæmoptysis for one year and six fistulæ for one year and a half. He took a mixture of the following composition:—

℞ Acidi tannici	ʒjss.
Acidi sulph. arom.	gtt. xv.
Glycerinæ	gtt. xxx.
Alcoholis	gtt. v.
Aquæ puræ, ad.	℥iv.

M.

Sig.—Teaspoonful to a tablespoonful three times a day.

He was 95 days in hospital. After taking the above recipe for 20 days the fistulæ were operated and healed perfectly. The cough and hæmoptysis were cured when the patient left the hospital.

CASE 2.—CHÊN; Liang-shan, in Anhwei province, was his home; aged 39; farmer. Hæmoptysis for three years. At times would cough up half a ricebowlful of blood; at others the expectoration would simply be streaked with blood. Had two fistulæ for two years. The external orifice was like a large ulcer. The patient first took a mixture of ammonia chloride and then the same tannin mixture as in Case 1, for about two months and a half. The hæmoptysis was controlled, but a slight cough remained. The fistulæ were then slit up, and eventually healed after 150 days' residence in hospital, but slight cough continued.

CASE 3.—KAN; Wu-wei-chou, in Anhwei province, was his home; a tradesman; aged 47. Had asthma for many years. Had two fistulæ. Took a mixture of iodide and bromide of potash for some time, also the ammonia chloride mixture. Fistulæ operated and eight parts cured. His son was ill and the patient left for home suddenly.

CASE 4.—SHOU; native of T'ai-p'ing-fu, in Anhwei; a student; aged 43. Suffered from cough and hæmoptysis for years. Had a small fistula. Had been in the habit of reading very late every night, and after some weeks of severe study suddenly coughed up a large amount of blood. Took the tannin mixture for a few days and some Dover's powder. The hæmoptysis ceased and only the cough remained. He then took the ammonia mixture and was operated. Was in hospital 63 days; the fistula was cured and only a slight cough remained.

CASE 5.—CHANG; native of Anhwei; aged 36; farmer. Hæmoptysis for six months. Coughed for five years. Had a slight single fistula. Took the tannin mixture also the ammonia mixture for some time and was operated. Was in hospital 48 days, and cured of hæmoptysis and fistula.

CASE 6.—LI; native of Hupeh; aged 38; boatman. Emaciated and suffering from cough and hæmoptysis. Had a hæmorrhoid, which was removed, and a fistula was discovered below it. This was slit up and healed. Took the tannin and ammonia mixtures, and later tincture of iron. Cough, hæmoptysis, and fistula were cured. Was in hospital 86 days.

Dr. J. A. LYNCH'S REPORT ON THE HEALTH OF CHINKIANG

For the Year ended 30th September 1895.

Meteorological Table, October 1894 to September 1895.

Month.	Barometer.		Thermometer.		Rainfall.
	Maximum.	Minimum.	Maximum.	Minimum.	
1894.	*Inches.*	*Inches.*	° *F.*	° *F.*	*Inches.*
October	30.38	30.00	79	48	0.61
November	30.55	30.04	70	38	2.38
December	30.65	30.05	60	23	0.61
1895.					
January	30.55	30.05	62	21	0.43
February	30.55	29.90	63	21	3.18
March	30.55	29.30	77	27	6.55
April	30.36	29.60	86	47	1.70
May	30.28	29.61	93	51	0.96
June	29.99	29.50	92	56	20.34
July	29.86	29.95	100	68	5.30
August	29.98	29.50	100	69	6.94
September	30.25	29.63	85	62	4.09

The winter of 1894–95 was mild, and but little sickness prevailed in the foreign community. One death occurred in December.

The patient, an old resident, aged 57, the subject of chronic dysentery, came into my hands on the 6th. He was then extremely blanched from long-continued hæmorrhage; face, hands, and feet were œdematous, and there was a little bronchitis. He grew rapidly worse, developed signs of œdema of the lung, and sank on the 10th.

The only other case of interest was a tedious one of subacute rheumatism complicated with double iritis. It ended in complete recovery.

Scarlatina is sufficiently rare in this region to make two cases treated in April worth recording. Both subjects were native employés of the British Consulate, and submitted rather reluctantly to Foreign medication. The disease ran a favourable course.

The summer may be described as wet and cool. An unprecedentedly heavy rainfall took place in June; July gave us three weeks of terrific heat, followed by the coolest August we have ever experienced.

Cholera is a familiar visitant to the native population, appearing as regularly with the return of the hot season as small-pox in the early spring. The epidemic of this year was of appalling violence, and lasted from the middle of June to the early days of September. The mortality seems to have been heaviest in the camps of Cantonese soldiers outside the south

gate of the city; but for anything like exact figures on this subject it is idle to inquire of the Chinese.

The various kinds of diarrhœa were unusually common among foreigners. Of choleraic diarrhœa, there were during July and August six cases, two of which ended fatally. One of these was an infant of 12 months, the other a man of 33, who had been a good deal run down by previous illness. Two more foreigners died of true Asiatic cholera: a Customs Salt Searcher who lived in a Chinese quarter adjoining the Settlement, and an engineer on board the steamer *Woosung*. Whether this latter had contracted the disease here or at another port was somewhat doubtful. In both cases a "premonitory diarrhœa" of several days' duration preceded the onset of typical choleraic symptoms, which ran on to death in less than 12 hours.

Cholera within the actual boundaries of the Concession was verified in four instances. The patients, all Chinese, recovered; and the most thorough disinfection was carried out on each occasion.

Of other complaints affecting Europeans, I may mention a case of tonsillitis treated in July, and another in August; several cases of malarial intermittent in August and September, the worst of these in a boy of 4, whose temperature repeatedly went up to 106°, but who recovered quickly under large doses of quinine; and, lastly, a good many cases of boils. Beyond attention to the general health, and the use of the knife at the first sign of suppuration, I know of no treatment for this distressing ailment. Yeast I have found useless and sulphide of calcium worse than useless.

An enormous increase in the trade of this port has been brought about by the transfer of the rice export from Wuhu to Chinkiang. The consequent addition to the shipping and influx of a large coolie population bringing so many elements of danger to public health, roused the Municipal Council to an unwonted degree of activity in sanitary matters. In spite of the many difficulties occasioned by apathetic and obstructive lot-owners, and by the carelessness and filth of the Chinese, a very gratifying measure of reform has already been achieved. All the old insanitary latrines and urinals have disappeared, and with them most of the surface nuisances of every kind that were fast becoming a disgrace. There is now an ample provision of thoroughly sanitary conveniences, both public and private, the cleansing and disinfection of which are seen to by the Council. The primitive brick drains on private lots, so admirably adapted to retain sewage and allow it to soak into the soil, are gradually being replaced by surface gutters, or pipe drains of cement, properly fitted with syphon traps. An effort to make more satisfactory provision than now exists for the water supply of the Settlement is also in contemplation. It is much to be regretted that the unwillingness of native officials to co-operate has up to the present made it impossible to deal effectually with the faults of the main drainage system.

Two children were born during the year, one in July (still-born) and one in August.

DR. JOHN FRANCIS MOLYNEUX'S REPORT ON THE HEALTH OF NINGPO

For the Half-year ended 30th September 1895.

DURING the period under consideration there have been two deaths and one birth among foreigners.

The deaths occurred to adult males—the first (one of the Customs staff) was due to apoplexy (aged 54), the second (aged 61) was a case of cholera. Both happened during the trying heat experienced here in the late days of July and early days of August.

The case of cerebral hæmorrhage eventuated in a very frail subject, a sufferer from organic heart trouble of long standing, upon whose body widespread ecchymoses indicated a wretched vascular system.

The case of cholera I only saw after death and upon the arrival of the Shanghai steamer. Its history and the postmortem appearances indicated that cholera had been the fatal trouble.

Generally, the health of the foreigners here has been excellent, as in my experience it usually is at Ningpo if people start with a fair constitution and lead a life regulated by common sense. There is no bad type of local malarial trouble to be dreaded, and I have not seen one case of typhoid fever in the district. One severe case of remittent fever has required attention recently, but the trouble was induced and maintained by injudicious conduct on the part of the sufferer. Children here enjoy excellent health; during a period of two years there has not been an anxious case among the many infants.

CHOLERA AND CHOLERAIC DIARRHŒA.

In addition to the fatal case already reviewed,

A foreigner (an adult male, aged 26) was seized with vomiting, cramps, purging (rice-water stools), followed by collapse and a temperature of 95°. He was removed to the hospital, and in two days was out of danger. The cholera bacillus was not demonstrated, and it is by no means certain that it was present. During convalescence this patient had a long and troublesome attack of enteritis, but made a good recovery.

Among the Chinese, 140 cases of cholera and choleraic diarrhœa were admitted during the latter half of July and the first two weeks of August. Many of these were certainly not cholera, although vomiting, purging, cramps, and subnormal temperature were almost constant symptoms. About 20 per cent. terminated fatally—a far too modest death rate for epidemic cholera. This visitation was synchronous with the trouble prevailing in Shanghai, and many cases were landed here by the daily steamers from that port.

DYSENTERY.

Three or four cases occurred among foreigners during the past two months, but no really alarming case came under observation. Among Chinese, the excellent and almost startling

effects of ipecacuanha in full doses are a cause for congratulation; given here in doses of 30 or 40 grains, it is the exception for a native to vomit after its exhibition (of those in hospital, less than 10 per cent. have thus rejected the drug). There can be no doubt that this invaluable remedy would be more readily tolerated by foreigners were they ignorant of its reputed emetic properties.

Surgical Memoranda.

A man was trephined for a depressed fracture of left parietal bone, caused by a bullet which failed to penetrate the skull. The bone was shattered and four fragments were extracted from the brain substance, a quantity of blood-clot and grey matter being extruded. The man was perfectly conscious upon the completion of the operation, and lived for seven weeks; he suffered from right hemiplegia and ultimately developed a large abscess in the right lung. Some days before death there was a smart venous hæmorrhage from the cerebral vessels, and as a late expedient I syringed out the cavity with dilute tincture of perchloride of iron; this proved efficacious at the time, and a later persistent slight oozing would have probably been prevented had a stronger solution been used and a little more courage exhibited by the operator.

Two amputations (one leg and one arm), with the usual run of minor surgical work, offer no special points of interest.

A most unsatisfactory case of sub-glenoid dislocation of the humerus of not more than one month's standing has defied all efforts at reduction. The man (aged 26) has been under chloroform upon four occasions, and pulleys have been unsuccessfully employed. The exasperating facts about this case are the recency of the injury and the experience that failure under such apparently favourable conditions is so rare. So far as one can judge, there is nothing remarkable about the displacement, and there is no co-existent injury or disease. Able help has been received from a capable colleague, but up to the present the man remains unrelieved.

The Sister's Hospital in the Settlement has now excellent accommodation for 70 patients, and in the city there has been opened a new women's and children's hospital, which will accommodate 35 patients.

Forwarded herewith is the meteorological table for the period under review, for which I am indebted to Mr. H. C. Müller, Tidesurveyor.

Meteorological Table, April to September 1895.

Month.	Thermometer.			Barometer.			Prevailing Winds.	Rainfall.	
	Highest.	Lowest.	Mean.	Highest.	Lowest.	Mean.		No. of Days.	Quantity.
	° F.	° F.	° F.	Inches.	Inches.	Inches.			Inches.
April	85	45	61	30.44	29.84	30.07	S.E.	11	5.01
May	86	55	69	30.40	29.80	30.03	S.E.	11	6.20
June	103	56	79	30.14	29.69	29.90	S.E.	5	0.83
July	97	69	81	30.00	29.68	29.86	S.E.	7	7.62
August	100	67	82	30.08	29.72	29.88	S.E.	9	6.79
September	89	62	73	30.28	29.55	30.07	N.W.	8	10.51

DR. ALFRED HOGG'S REPORT ON THE HEALTH OF WENCHOW

For the Half-year ended 30th September 1895.

OWING to the departure of Dr. J. H. LOWRY for Europe, he has left to me, his successor, the completion of the health report for the past six months. The health of the foreigners during that period has not been good, and much sickness prevailed among the natives.

Although the average temperature during the summer was not specially high, yet the period of hot weather was long and sustained, with few intermissions; and as for a large part of that time the atmosphere was humid, close, and oppressive, the hot season was felt by the foreign residents to be particularly trying and enervating. Heavy rains alternated with periods of dry weather, during which the canals and wells got very dry or low, and as the natives largely resort to canal water when well water is scarce, infectious disease had abundant opportunity to spread, and great mortality from cholera resulted.

In the foreign community one birth and two deaths have to be recorded. Of the latter, one was that of a lady who had been resident in the port for about four years. She died at sea, while being removed to Shanghai, from cardiac failure following on heat apoplexy.

The other death was that of a missionary's infant son, who suffered from dyspepsia and was brought to the city by the father for medical consultation. The child was improving under treatment when he was suddenly seized with severe diarrhœa, abdominal pain, and collapse, and died in 20 hours. The fact that four or five Chinese in the same compound showed identical symptoms, with a fatal termination in most of the cases, made it plain that the cause was Asiatic cholera. How the child became infected could not be traced.

Among foreigners, the cases that came up for treatment comprised:—

Diarrhœa.	Anæmia.
Remittent fever.	Fatty degeneration of heart.
Rheumatic gout.	Acute congestion of the liver.
Bronchial catarrh.	Acute and chronic tonsillitis and pharyngitis.
Gout.	Cholera.
Conjunctivitis.	Otitis.

A considerable number of serious cases among Chinese were also treated.

One was a case of dysentery in a cook in foreign employ. The disease started during his master's absence from the city, and was allowed to progress for a day or two before medical aid was sought. Notwithstanding treatment by ipecacuanha in large doses, the case terminated fatally.

Another man came with a bullet lying in his left temple, the result of a skirmish with pirates three months previously. The bullet had struck him on the forehead and nearly penetrated to the brain, then travelled round, and lodged close to the ear. It was extracted, and rather profuse hæmorrhage from a

branch of the temporal followed, ligature of the vessel being managed with difficulty, owing to the soft, friable nature of the adjoining tissues. The wound healed well.

A severe bullet wound in the forearm, a large burn on the arm and forearm from a gunpowder explosion, and a huge scalp wound were conspicuous among a large number of minor and major ailments treated at the dispensary of the Methodist Free Church Mission.

I append an abstract from the Customs meteorological observations taken at this port.

METEOROLOGICAL TABLE, April to September 1895.

MONTH.	Highest Reading of Barometer.	Highest Reading of Thermometer.	RAINFALL.		REMARKS.
			No. of Days.	Quantity.	
	Inches.	° *F.*		*Inches.*	
April	30.040	79	17	4.54	3rd, 4th, 7th, and 29th thunder and lightning.
May	30.300	81	24	8.25	19 days fog.
June	30.050	92	7	2.40	10 days fog.
July	29.990	92	16	6.40	6 days thunder and lightning.
August	29.974	93	9	8.47	9 days thunder and lightning.
September	30.180	90	13	5.13	8 days fog. Heavy gale of wind on the 5th; lowest reading of barometer at 3 P.M., 29.368.

DR. LEOPOLD G. HILL'S REPORT ON THE HEALTH OF PAKHOI

For the Half-year ended 30th September 1895.

THE general health of the foreign community at Pakhoi (now numbering 25) during the past six months has been very good. In the opinion of the oldest residents, the summer was exceptionally oppressive, though the maximum temperature never exceeded 97°.5 (recorded in September), whilst the minimum was 65° (also in September). The damp, hot atmospheres of May, June, and July were the most trying climatic circumstances with which we had to combat. The rainfall in those months was respectively 5.71, 10.65, and 26.30 inches. Foreigners in Pakhoi, living as they do on the plain, seem to be fairly free from fever, those who had slight malaria having been victims to it in a severer form at other ports; very few, if any, get it *de novo* here. This is due to three physical facts: (1) the soil is almost entirely sand to a depth of several feet; (2) there is nearly always a sea breeze blowing, for Pakhoi, being on a peninsula, has the sea to the north, south, and west; and (3) Pakhoi is perfectly flat and is open to the slightest movements of the atmosphere. We do not get typhoons, but always know of their existence elsewhere by the very strong winds which then prevail.

Patients were attended for diarrhœa, dysentery, malaria, bronchitis, asthma, and a few minor ailments; and one infant, aged 7½ months, died of meningitis during teething, after only 36 hours' illness—an otherwise healthy and strong-looking child.

There have been two births during the summer, one male and one female.

As regards the health of the native population, one cannot write so satisfactorily. I have referred to the great advantages accruing to the foreign community by living on the plain. Now the town of Pakhoi is packed as tightly as it can be in a depression on the sea-coast and close to the water's edge, all the houses on the sea-board being built on stakes, which are swept away with every abnormal tide. Lying in a hollow, the town does not get the beneficial breezes which keep the villages on the plain so healthy; the streets are nearly always filled with a black, slimy fluid, which continually breeds all sorts of diseases. Yet one is surprised not to have seen a single case of typhoid or typhus fever. Even cholera, which broke out in August, soon disappeared after claiming three or four victims daily for two or three weeks. Bubonic plague has not been heard of in the town this summer, but was severe in the neighbouring fishing port of Kotak.

A few soldiers from the war were landed here worn out with dysentery and fever: one or two died from cholera; another, who came under treatment for the latter disease, was saved by the acetate of lead and acetic acid treatment, but convalescence was very tardy.

As interesting surgical cases among the natives, the following may be briefly mentioned:—

1. *Epithelioma of the Penis.*—During the past six months three patients presented themselves with this disease, two of whom begged for amputation on account of severe pain. After a preliminary course of iodide of potassium, during which there was no improvement, their request was granted. In all three cases the glans alone was affected.

A., aged 38. 18 months ago noticed on the glans a little lump, which grew to the size of a small tangerine orange, with cauliflower-like appearance, from the sulci of which an offensive serous pus discharged. The growth ends abruptly with the glans and is very painful. Glands in both groins are slightly enlarged.

B., aged 52. Had a tight foreskin. A year ago there appeared on the body of the glans a small lump, which gradually and painfully enlarged. The growth involved the tight foreskin, and eventually ulcerated through, leaving shreds of the foreskin still visible. It was not large, perhaps twice the size of the natural glans; but it was exceedingly painful and discharged a horrid smelling pus. Glands in groin slightly enlarged and very hard. The urethræ in these two cases were difficult to find.

A. and B. having asked for operative treatment, the organs were removed, A.'s under cocaine and B.'s under chloroform. Both made uneventful recoveries and had no retraction of the urethra.

C., aged 57, had a similar condition to A.'s: cauliflower appearance, but not so large; very painful. The glands in groin only slightly enlarged. Refused treatment.

2. *Dental Tumour.*—A man, aged 37, with a swelling from the left side of lower jaw, the size of an infant's head, came to the Mission Hospital with the request that the discharge into the mouth might be stopped. He gave an indefinite account of a severe toothache some six years back, since which time the swelling had increased. On examination, it felt soft in some places and hard in others, was obviously an expansion of bone, giving a semi-crepitant sensation; under the skin small pieces of flat bone could be felt, and in one place a tooth. It was painless except what inconvenience arose from its weight, and the room it occupied in the mouth. The teeth on the left side of the lower jaw were gone, with the exception of the central and lateral incisors, which were loose and pushed towards the right. On tapping a fluctuating spot, a glairy, viscid fluid exuded, and later a large quantity of blood. The cyst was multilocular. A reproduction from a photograph of the patient is appended.

3. *Gonorrhœal Ophthalmia.*—I mention this case because it brought to my knowledge a shocking habit of the lower classes. Two patients informed me recently that they had used their own urine as an eye lotion to relieve conjunctivitis. One had been blind some two or three years, owing to an attack of inflammation for which he adopted this disgusting treatment; at that time, as he himself said, he was suffering from gonorrhœa. The second man, when seen, had contracted gonorrhœa, and explained that he had used his urine as an eye lotion. The eyes were blocked up with pus, the eyelids very swollen and red, the pupils contracted, and the conjunctivæ in a state of intense chemosis. Under constant irrigation with perchloride of mercury solution (1 in 5,000) he made a complete recovery.

It would be interesting to know if this is a universal custom among the Chinese, and also how many are made blind annually by the coincidence of gonorrhœa.

Of the commoner diseases, perhaps a new-comer is most struck with the great number of Chinese suffering from tinea circinata, scabies, and worms; certainly three-fourths of those I have seen would come under one of these headings. Then in this neighbourhood leprosy is very frequent; the majority of those attacked are men, a singular fact which ought to help in ascertaining its etiology. Opium-smoking is very common, and numbers come to beg for medicine to rid them of its thraldom. One man (of the upper class) told me he took 30 grains of hydrochlorate of morphine at a sitting and, producing a 2-ounce bottle, said he finished it in a week. Eye diseases are also exceedingly prevalent and full of interest; most of them, however, yield to treatment, and this, at least, demonstrates forcibly to the Chinese the great superiority of Western medical and surgical science over that of the Eastern.

I append a meteorological table kindly made out for me by Mr. L. A. BYWORTH, Harbour Master.

METEOROLOGICAL TABLE, April to September 1895.

MONTH.	BAROMETER.		THERMOMETER.			WINDS.						RAIN-FALL.
	Highest.	Lowest.	Highest.	Lowest.	Mean.	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Calm.	
	Inches.	*Inches.*	° *F.*	° *F.*	° *F.*							*Inches.*
April	30.22	29.78	93.00	72.00	77.26	3	10	...	1	16	...	0.91
May	30.17	29.79	93.00	67.00	81.30	5	5	8	2	11	...	5.71
June	30.03	29.69	95.00	70.00	83.23	3	4	12	1	10	...	10.65
July	29.97	29.40	96.50	73.00	84.83	2	2	20	1	6	...	26.30
August	30.00	29.79	93.50	74.00	83.40	5	3	4	2	17	...	11.89
September	30.15	29.81	97.50	65.00	82.50	13	2	1	4	10	...	1.61

RAPPORT MÉDICAL

POUR L'ANNÉE FINISSANT LE 30 JUIN 1895, SUR LA SITUATION SANITAIRE DE LUNGCHOW,

Par le Docteur J. J. DELAY.

CLIMATOLOGIE.*

LA ville de Lungchow (Longtchéou) se trouve par 22° 25′ de latitude nord et 106° 45′ à l'est du méridien de Paris, par conséquent dans la région prétropicale. Son altitude est d'environ 300 mètres au-dessus du niveau de la mer. Elle est située au confluent de deux rivières venant du haut Tonkin, au milieu d'un vaste cirque entouré de rochers calcaires. Le sol est généralement de nature argileuse.

Deux saisons bien tranchées, l'été et l'hiver, sont reliées par deux périodes intermédiaires comparables au printemps (mars, avril) et à l'automne (octobre, novembre).

La température moyenne de la saison chaude (mai, juin, juillet, août, septembre) a été de 27°.5 centigrades pour chacune des années 1893 et 1894. L'été de 1895 s'annonce comme devant être très-chaud.

La moyenne des mois d'hiver (décembre, janvier, février) a été de 17° en 1893–94 et de 15° en 1894–95.

La moyenne annuelle pour 1893 a été de 22°.5 et pour 1894 de 23°.5. Lungchow est en effet compris dans la zone isotherme limitée par les lignes des températures de 20 et 25 degrés de HUMBOLDT, la première passant au nord du Kweichow, la seconde traversant l'île d'Hainan.

La pression barométrique, observée seulement depuis le milieu de septembre 1894, suit comme de coutume une marche en sens inverse de la température. Les pressions les plus basses correspondent aux mois les plus chauds, pendant lesquels la direction générale des vents est sud. Pendant l'hiver, au contraire, avec les vents du nord et l'abaissement de la température, apparaissent les hautes pressions barométriques.

Les variations diurnes généralement observées dans les régions tropicales sont également très-régulières. Les maxima ont lieu vers 10 heures du matin et 10 heures du soir, les minima vers 4 heures du matin et 4 heures après-midi. L'amplitude de l'oscillation de nuit est habituellement inférieure à 1 millimètre, tandis que celle du jour dépasse souvent 2 millimètres.

Les variations accidentelles sont assez rares et dépendent des vents et des orages. Une pression minima de 744.5 millimètres a été relevée le 20 septembre 1894. Elle coïncidait avec un violent typhon du sud-est observé sur les côtes de la Chine et du Tonkin et qui s'est fait sentir jusqu'à Lungchow.

* Quoique ce travail porte plus spécialement sur la période de juillet 1894 à juillet 1895, j'ai cru devoir, pour donner une idée plus exacte du climat, fournir quelques renseignements sur les années précédentes.

En dehors de cette circonstance exceptionnelle, la pression minima (absolue) a été de 748.5 le 5 avril 1895 et la pression maxima de 774 le 17 décembre 1894. Les observations ne portant pas encore sur une année complète, il n'a pu être établi de moyenne générale.

Le poste n'étant pas pourvu d'un pluviomètre, il a été impossible d'évaluer la quantité d'eau tombée. Pendant l'été de 1894 les pluies ont été assez abondantes et des crues de 8 mètres environ ont été observées en juillet et en septembre. Par contre, les journées de crachin ont été très-peu nombreuses pendant l'hiver, qui a été particulièrement sec. Quant à l'été actuel il est jusqu'à présent marqué par une sécheresse exceptionnelle.

Les observations hygrométriques n'ont pas été relevées faute d'instruments.

OBSERVATIONS MÉTÉOROLOGIQUES du 1er Juillet 1894 au 1er Juillet 1895.

Mois.	Température*: Moyennes des			Pression barométrique (Moyennes de trois Observations quotidiennes).	Jours pluvieux (Pluie ou Crachin).	Orages.	Vents dominants.	Autres Observations.
	Maxima.	Minima.	Générales.					
1894.	° C.	° C.	° C.	*Millimètres.*				
Juillet	29.7	25.1	27.4	...	26	1, sud-ouest	Sud	Crue du fleuve le 28 (8 mètres!).
Août	31.5	24.6	28.0	...	16	6, "	"	
Septembre	30.7	22.1	26.4	756.0†	18	1 typhon, sud-est.	"	Crue le 23 (8 mètres!).
Octobre	26.3	18.6	22.9	762.0	5	...	"	
Novembre	24.7	13.9	19.3	764.5	3	...	Nord et nord-est; sud avec le crachin.	
Décembre	20.6	11.5	16.0	765.6	2	...	"	
1895.								
Janvier	15.8	9.7	12.7	765.9	9	...	"	
Février	20.4	12.4	16.4	762.1	10	...	"	
Mars	22.8	14.2	18.5	759.8	8	...	Sud et parfois encore nord et nord-est.	
Avril	29.1	23.5	26.3	758.3	8	2, sud-est	Sud.	
Mai	30.0	24.7	27.4	757.0	17, pluies très-peu.	3, "	"	
Juin	31.7	25.5	28.6	755.4	10, pluies abondantes.	2, sud-est; 1, sud-ouest.	"	Halo solaire simple observé le 19.

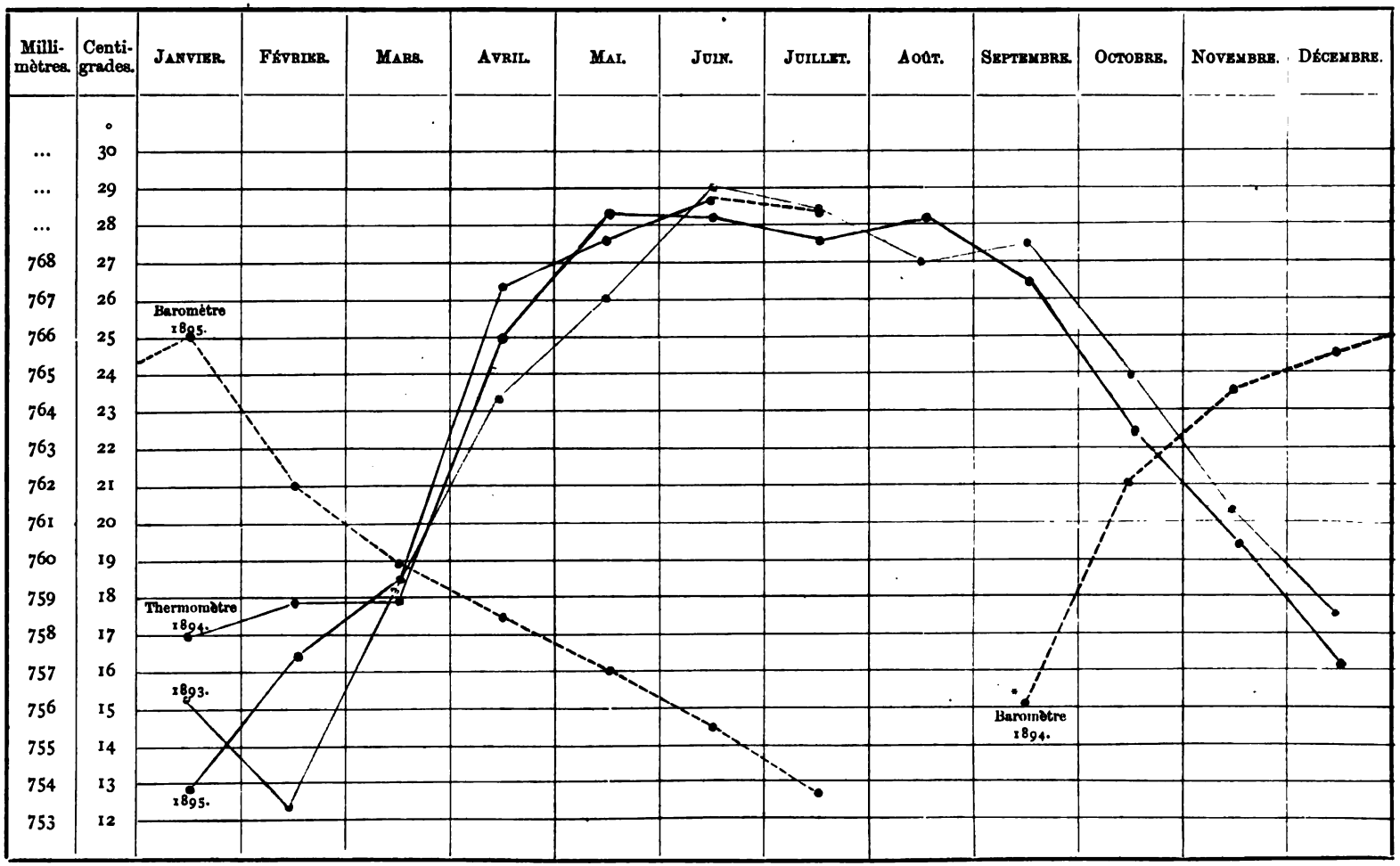
* Il faut noter que les températures ont été relevées au Consulat de France, qui se trouve à la campagne, entouré de verdure. Dans la ville même les maxima sont supérieurs de 1½° à 2°. Les observations ont été prises par M. BEAUVAIS, Interprète-chancelier.

† Pour septembre le chiffre est approximatif, les observations n'ayant été prises que pendant la dernière partie du mois.

PATHOLOGIE.

Les Européens habitant Lungchow sont seulement au nombre de sept et appartiennent tous soit au personnel des Douanes chinoises soit au Consulat de France. Par suite, à part quelques cas assez sérieux tributaires de l'endémie palustre ou du climat tropical, les affections observées chez eux ont été de peu d'importance. Je me contente de les mentionner ci-dessous, devant revenir plus loin sur l'état sanitaire général.

TABLEAU COMPARATIF des TEMPÉRATURES MOYENNES pendant les Années 1893, 1894 et la première moitié de 1895 et de la PRESSION BAROMÉTRIQUE d'Octobre 1894 à Juillet 1895.



* La moyenne barométrique de septembre 1894 est approximative, les observations n'ayant été relevées que pendant la deuxième moitié du mois.

Nota.—Les moyennes de juillet 1895 sont indiquées à titre de renseignement complémentaire.

J'ai été appelé à donner mes soins à un assez grand nombre d'habitants. Les affections que j'ai eu l'occasion de traiter chez les Asiatiques ont été très-variées, ainsi que le montre le tableau ci-joint. Cela du reste n'a rien d'extraordinaire pour une population d'environ 20,000 habitants. Malheureusement, la ville ne possédant pas d'établissement hospitalier, je n'ai pu voir ces malades que chez eux ou chez moi. La plupart d'entre eux ont donc échappé à une observation suivie, et l'énumération des maladies traitées ne peut donner une idée bien complète de la pathologie.

Les opérations nécessitées par le traitement des affections chirurgicales ont toutes été de peu d'importance.

Les vaccinations pratiquées avec succès sont au nombre de 17.

Maladies observées.

Européens.

Pathologie interne.

Fièvre paludéenne	10
Diarrhée aigue	1
„ chronique	1
Congestion du foie	1
Hémorrhoïdes internes	1
Dyspepsie atonique consécutive à l'anémie tropicale	1

Pathologie externe.

Adénite suppurée consécutive à une fièvre continue palustre	1
Abcès tubéreux de l'aisselle	1
„ dentaire	1
Corps étranger du conduit auditif	1
Furonculose	1
Herpès circiné	1

Asiatiques (Chinois, Annamites, Aborigènes).

Pathologie interne.

Maladies épidémiques et infectieuses.	Peste	1 (décès 100?)
	Oreillons	1
	Fièvre typhoïde	4 (décès 1)
Fièvre paludéenne simple		45
Accès pernicieux comateux		1 (décès 1)
Laryngite chronique		1
Bronchite simple		11
Pleurésie		1
Emphysème pulmonaire		2
Tuberculose pulmonaire		4 (décès 1)
Palpitations cardiaques et anémie		2
Insuffisance aortique		1
Stomatite simple		1
Angine simple		1
Dyspepsie		3
Dilatation de l'estomac		1

Diarrhée	7
Dysentérie	6
Tænia	1
Ascarides lombricoïdes	2
Congestion du foie	2
Hypertrophie de la rate	1
Néphrite albumineuse	1
Rhumatisme articulaire aigu	3
„ „ chronique	3
Rachitisme	1
Atrophie musculaire du membre inférieur droit (origine indéterminée)	1
Névralgie faciale	2
Empoisonnement aigu par l'opium (1 garçon de 20 ans, 1 fille de 12 ans)	2 (décès 2)

Pathologie externe.

		Opérations.
Abcès simples	14	Ouvertures d'abcès, phlegmons, adénites, etc.
Phlegmons (membres)	3	
„ paroi abdominale	2	
Panaris	1	
Adénites suppurées diverses	5	
Abcès par congestion	1	Ponction et aspiration.
Morsure de cheval	1	
„ chien	2	
Brûlure à la main, 3e degré (par explosion de dynamite)	1	
Plaies contuses	4	
Ulcères	12	
Entorse tibio-tarsienne	1	
Lymphangite	1	
Ostéite	1	
Arthrite du genou	2	
Rétraction des fléchisseurs	1	
Fongosités ombilicales	1	Excision.
Verrue volumineuse (avant-bras)	1	„

		Opérations.
Lupus de la face	1	Raclage.
Tumeur érectile veineuse	1	
Chute du rectum	1	
Conjonctivite simple	5	
Keratites	3	
Abcès de la cornée	1	Paracentèse.
Rétinite	1	
Entropion	2	Sutures de Gaillard.
Ptérygion	1	Excision.
Otite externe	2	
Obstruction de la trompe d'Eustache	1	
Hydrocèle	1	Ponction et injection iodée.
Orchite paludéenne double	1	
Paraphimosis	1	Débridement.
Rétrécissement cicatriciel du méat et de l'urèthre supérieur	1	Débridement et uréthrotomie supérieure.

Maladies cutanées.

Ecthyma	1
Eczema	8
Favus	2
Gale	4
Herpès circiné	4
Lèpre (tuberculeuse et anesthésique)	2
Pelade	1
Psoriasis	4

Maladies vénériennes.

Balanite et chancres simples	1
Blennorrhagie	3
Orchite blennorrhagique	1
Chancre phagédénique	1
Bubon suppuré	1
Chancre induré	3
Syphilis secondaire	4
„ tertiaire	2

Obstétrique.

Accouchements	2	(dont 1 terminé par application de forceps et suture du périnée).
Hémorrhagie utérine	1	(consécutive à un avortement au quatrième mois).

Maladies épidémiques et infectieuses.

La peste, qui avait déjà été observée par mon prédécesseur, le Dr. Simond, en 1893 et 1894, a de nouveau cette année fait son apparition dans la dernière semaine d'avril d'abord, dans le courant de juin ensuite. Les cas paraissent avoir été relativement peu nombreux mais

fort sérieux. Il n'est pas possible d'évaluer exactement le nombre des décès; je crois que ce nombre n'a pas dépassé 100. Des mesures de protection ont été prises à cette occasion par le gouvernement du Tonkin.

Il est difficile d'établir d'une façon certaine les causes de la peste à Lungchow. Le Dr. SIMOND avait cru remarquer que la maladie avait été les années précédentes importées du Yunnan au camp de Lien-ch'êng, importante agglomération de troupes située entre Lungchow et la frontière, d'où elle gagnait la ville, faisant ses premières victimes parmi les hommes de la garnison. Cette année, au contraire, aucun soldat n'a été atteint soit à Lien-ch'êng soit à Lungchow et rien ne peut faire supposer que la maladie a été importée.

Parmi les petites villes voisines, P'ing-hsiang, sur la route de Langson, serait demeurée indemne. Quelques décès, par contre, ont eu lieu à Hadung et à Thuycao, sur la rivière de Caobang.

L'apparition de la maladie a coïncidé avec une prolongation inusitée de la saison sèche, une température elevée (30° à 35° centigrades pendant la journée) et une baisse notable de la pression barométrique. Elle avait été précédée comme de coutume par une mortalité considérable des rats. À la fin de l'épidémie on a pu noter l'apparition de quelques fortes pluies d'orage venant rafraîchir l'atmosphère. Ces ondées entraînaient en même temps au fleuve les détritus de toute nature qui accumulés pendant une longue période de sécheresse, infectaient l'air au point de rendre intenables certains carrefours de la ville.

J'ai eu l'occasion de constater également quelques cas de fièvre typhoïde et un cas isolé d'oreillons. La première de ces maladies aurait fait d'assez nombreuses victimes au camp de Lien-ch'êng. Le typhus pétechial m'a été signalé du côté de T'ai-p'ing-fu. La variole et le choléra, qui avaient sévi d'une façon assez meurtrière les années précédentes, n'ont pas été observés cette année.

HYGIÈNE: SALUBRITÉ.

À Lungchow aucun service de voirie n'est organisé. Les prescriptions, toutes platoniques, des autorités chinoises, invitant les habitants à assurer la propreté de leurs demeures et des rues, demeurent toujours lettre morte, et aucune mesure d'assainissement n'est prise. Qu'attendre du reste à ce point de vue d'une population qui, suivant de très-anciennes coutumes, conserve ses morts plusieurs mois, soit dans les maisons privées soit dans des dépôts mortuaires situés en pleine ville! Les corps des individus morte de la peste ou d'autres maladies infectieuses ne font l'objet d'aucune exception et leurs cercueils ne sont ni fermés avec plus de soin, ni désinfectés d'une façon particulière.

Chaque année, depuis la création du poste médical de Lungchow, des cas de peste, de choléra, de variole ou de typhus ont été observés, se manifestant par poussées irrégulières, variables d'intensité et de gravité. On peut donc certainement considérer la ville comme présentant un terrain très-propre à l'incubation des maladies infectieuses, dont les germes, apportés de l'extérieur ou prenant naissance sur place, ne demandent pour se développer que des conditions atmosphériques favorables.

Lungchow me paraît jouir d'une réputation usurpée de salubrité et je partage en cela l'avis de mon prédécesseur. La ville est parsemée de mares servant de dépotoirs aux habitants. Ce sont de véritables cuvettes palustres dans lesquelles l'eau des pluies s'accumule en se chargeant de principes calcaires et argileux. Les débris organiques trouvent dans ces cuvettes un milieu très-favorable à leur décomposition. Ils s'y fixent par défaut d'écoulement et fermentent. Aussi, sans parler des maladies infectieuses qui regnent périodiquement, l'endémie paludéenne a une place marquée dans la pathologie de la région et lui imprime son cachet particulier. Les indigènes lui payent un large tribut. Les Chinois qui viennent de Canton ou de Shanghai, les Annamites arrivant du Tonkin, ont presque tous des accès de fièvre intermittente.

Il en est de même pour les Européens. S'il est vrai que ces derniers paraissent résister en général assez bien au climat, il faut tenir compte de leur petit nombre et des conditions dans lesquelles ils vivent, ne sortant pas au soleil, se nourrissant convenablement sans faire d'excès, n'ayant pas à supporter de fatigues corporelles. Malgré ces conditions, qui réduisent au minimum de leur action les influences pathologiques, plusieurs ont été sérieusement atteints et presque tous présentent un degré plus ou moins prononcé d'anémie. Il ne faut pas oublier enfin que l'isolement, le manque de distractions, l'ennui et la dépression morale qui en résulte parfois, peuvent avoir une influence marquée sur la santé générale de quelques-uns, et j'estime qu'aucun fonctionnaire ne devrait, sauf sur sa demande, être maintenu plus de deux ans dans ce poste éloigné.

RAPPORT MÉDICAL

POUR LE SEMESTRE FINISSANT LE 30 SEPTEMBRE 1895, SUR LA SITUATION SANITAIRE DE MENGTSZ,

Par le Docteur J. L. MICHOUD.

La constitution médicale qui a prévalu à Mengtsz durant le semestre s'étendant du 30 avril au 30 septembre 1895 a différé sensiblement de la constitution médicale du même lieu durant les précédentes années. Rarement pareille année de sécheresse s'est vue à Mengtsz. La saison chaude s'est écoulée sans amener les pluies estivales abondantes qui, en temps ordinaire, s'abattent sur la région. Des changements nosologiques importants semblent s'être introduits dans la pathologie locale, dûs vraisemblablement aux modifications climatiques et saisonnières qui se sont produites.

La peste bubonique, le *yang-tzŭ-ping* (痒子病), qui depuis nombre d'années débute régulièrement vers le milieu ou la fin du mois de mai, n'avait pas encore paru au premier juillet de la présente année. Mais l'espoir, jusqu'alors si chèrement caressé par les habitants de Mengtsz, d'une année écoulée sans les ravages du fléau, devait être cruellement déçu. Le retard dans l'apparition de l'épidémie se trouva plus que compensé par l'intensité extraordinaire de son éclat. Le milieu dans lequel le bacille pathogène se perpétue sembla, sous l'influence des changements météorologiques, avoir acquis des qualités nouvelles, éminemment favorables à la culture, la multiplication et surtout la virulence de ce bacille. Ce milieu de culture c'est le sol, comme l'ont confirmé les recherches de YERSIN, KITASATO. Ce serait donc dans la constitution chimique de ce sol, variable évidemment selon les saisons, qu'il faudrait rechercher la raison d'être de l'activité alternante mais pérenniale du micro-organisme de la peste. L'épidémie de cette année ne se déclara que vers les premiers jours de juillet, pour se terminer plus tard que d'habitude, vers le milieu de septembre. Sa durée fut donc à peu près la même que durant les précédentes années. Mais le nombre des victimes atteint un chiffre au moins triple du chiffre habituel, soit de 1,200 à 1,500 victimes. Certains jours, il y eut jusqu'à 50 décès. La proportion des guérisons fut infime, et les natifs déclarent n'avoir pas encore vu le fléau se manifester avec une telle intensité.

Comme d'ordinaire, les secours du médecin européen ne furent guère sollicités, ne pouvant compter sur aucun remède efficace, capable par ses effets curatifs de frapper l'imagination des indigènes et de les décider à recourir à nous. Car ce que le natif recherche en s'adressant au médecin, quel qu'il soit, ce n'est pas un traitement judicieux ou des soins éclairés, c'est uniquement une drogue, un médicament quelconque. Ne rien prescrire, c'est pour le Chinois de Mengtsz ignorer totalement son art.

Nous pouvons bien ajouter que tant que les conditions navrantes dans lesquelles nous nous trouvons pour la pratique de notre profession, à Mengtsz, n'auront pas été modifiées, nous

n'avons aucun espoir de nous attirer la confiance des natifs, pas plus qu'aucun désir de solliciter leurs visites. Le rôle ridicule de médecin distributeur de médicaments à des malades qu'il ne peut examiner, que souvent même il ne voit pas, est le seul qu'il nous eut été donné de remplir, si nous n'avions eu quelque égard pour notre dignité professionnelle, dans la situation pénible que, par suite d'un mal-entendu, nous occupons à Mengtsz.

La santé des neuf Européens habitant Mengtsz d'une manière permanente s'est maintenue bonne, malgré l'atmosphère morale déprimante qui les entoure. Un cas d'abcès dentaire, suivi de nécrose limitée du maxillaire supérieure constitue tout le bilan chirurgical. Mais si la vérité nous oblige à reconnaître la salubrité du climat de Mengtsz, il nous faut bien déclarer en même temps que le peu de comfort, la monotonie de l'existence, les ennuis inévitables dûs à un isolement prolongé sont justifiables de l'état de nervosité, de malaise moral dont souffrent ou ont souffert plus ou moins chacun des Européens vivant, depuis quelque temps, dans ce coin retiré du monde.

REPORT ON THE HEALTH OF THE LAPPA CUSTOMS DISTRICT

For the Year ended 30th September 1895.

THE epidemic of influenza which prevailed in Macao from November 1894 to March 1895, and that of the bubonic plague, which caused great ravages among the Chinese population of that city from April to June 1895, extended their evil effects to the whole of the Lappa district, which is not to be wondered at, considering its proximity and the close commercial relations existing between this Customs district and the above-named Portuguese colony.

Unfortunately, as I have stated elsewhere,* it is impossible to obtain reliable statistics of the population of this district; and if we wish to estimate the effects of the two epidemics experienced in it in 1894–95, we must do so from the published statistics for the neighbouring Portuguese colony.

The Colonial Surgeon of Macao in his report, from which the table given below is extracted, shows with sufficient clearness the mortality caused by the influenza and bubonic plague epidemics. From this table we find by comparing the averages of previous years with the figures for the six months ended March 1895 an excess in mortality, due to the influenza epidemic; while the excess shown in the six months ended 30th September 1895 is due to the bubonic plague.

The foreign employés of the Lappa Customs enjoyed immunity from both the epidemics, and, with the exception of a few mild cases of influenza, the half-year ended March 1895 was a most salubrious period for the Customs staff.

During the hot and damp summer months members of the staff stationed at Kwanchiap, Kuttai, and Shekkok are continually attacked by malarial fever. However, it is difficult to remedy this evil, seeing that the whole vicinity is more or less swampy and exposed to the direct rays of the sun, and, excepting Malowchow and Wanchai, there is no locality which will satisfy the double object of Customs administration, namely, the proper control of revenue and the complete preservation of the health of the staff.

In spite of the above circumstances, the climate of this district is considered favourable to the health of Europeans, because malarial fever only reaches an acute and complicated stage in exceptional cases, and as a rule it is easily cured by removal of the patient to another locality. Besides, during winter (November to February) malarial fever is hardly ever met with.

The influenza which raged in Lappa and Macao from November 1894 to March 1895 presented all the distinctive symptoms of this disease and assumed the same type as that reported upon by me in 1891. The mortality was mostly due to complications arising during

* Customs *Medical Reports*, xli, 16.

convalescence, particularly in persons of an advanced age, who succumbed through want of good nursing and the care so essential in this disease.

The bubonic plague followed in its course the various phases of the epidemic in Hongkong last year, and in reference to it there are only two circumstances worthy of being noted:—

1°. That in 1894 Macao enjoyed complete immunity from the plague while it was raging intensely in Hongkong and Canton, and that in 1895, when there were a few sporadic cases of an endemic form in Hongkong and Canton, Macao was invaded by the plague in all its intensity.

2°. That in 1894 it prevailed in Canton from February to August, and in Hongkong from May to September; that in Macao the first case occurred at the end of March and the last case was in the beginning of July, in the height of summer.

I do not attempt to explain these facts, but merely place them on record, in order to enable others to make their own deductions.

NECROLOGICAL TABLE for the last Six Years.

MONTH.	Average for last Five Years.	1894–95.	Difference.
	1889–93.	1894.	
October	222	194	− 28
November	202	299	+ 97
December	177	365	+ 188
	1890–94.	1895.	
January	166	289	+ 123
February	217	206	− 11
March	217	451	+ 234
April	169	824	+ 655
May	180	968	+ 788
June	212	428	+ 216
July	215	198	− 17
August	206	202	− 4
September	187	229	+ 42
November to March	979	1,610	631
April to June	561	2,220	1,659
	1,540	3,830	2,290

METEOROLOGICAL TABLE, October 1894 to September 1895.

MONTH.	Barometer (Mean Reading).	Thermometer (Mean Reading).	Psychrometer (Mean Reading).
1894.			
October	29.98	76.30	73.21
November	30.12	72.36	61.74
December	30.19	63.55	67.78
1895.			
January	30.17	56.61	75.39
February	30.10	60.88	79.16
March	30.07	64.07	77.38
April	29.94	74.37	81.69
May	29.85	78.77	81.02
June	29.78	83.33	77.21
July	29.74	84.55	77.20
August	29.74	83.87	76.94
September	29.82	83.20	71.57
AVERAGE	29.96	73.49	75.02

For the above abstract of the meteorological readings for the 12 months ended 30th September 1895 I am indebted to the kindness of Captain ALVES BRANCO, Harbour Master, Macao.

G. S.

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CHINA.

from

IMPERIAL MARITIME CUSTOMS.

II.—SPECIAL SERIES: No. 2.

MEDICAL REPORTS,

FOR THE HALF-YEAR ENDED 31ST MARCH 1896.

51st Issue.

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INSPECTOR GENERAL'S CIRCULAR No. 19 OF 1870.

INSPECTORATE GENERAL OF CUSTOMS,

PEKING, 31st *December* 1870.

SIR,

1.—IT has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to
- Season.
- Alteration in local conditions—such as drainage, etc.
- Alteration in climatic conditions.

e.—Peculiar diseases; especially leprosy.

f.—Epidemics
- Absence or presence.
- Causes.
- Course and treatment.
- Fatality.

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking.

* * * * *

3.—Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr. ....., and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 30th September—that is, for the Winter and Summer seasons.

4.— * * * * *

I am, etc.,

(Signed) ROBERT HART,
I. G.

THE COMMISSIONERS OF CUSTOMS,—*Newchwang*, *Shanghai*, *Tientsin*, *Ningpo*, *Chefoo*, *Foochow*, *Hankow*, *Amoy*, *Kiukiang*, *Swatow*, and *Chinkiang*, *Canton*.

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LE TYPHUS DES EUROPÉENS À PÉKIN.*

Par le Docteur J. J. MATIGNON,
MÉDECIN AIDE-MAJOR DE 1ère CLASSE DE L'ARMÉE,
ATTACHÉ À LA LÉGATION DE LA RÉPUBLIQUE FRANÇAISE EN CHINE.

LE typhus règne à l'état endémique à Pékin et dans tout le nord de la Chine. Le fait n'a rien qui doive nous surprendre, les meilleures conditions pour le développement de cette maladie se trouvent ici réunies: agglomération et misère. Tous les ans, au printemps, l'affection revêt un caractère épidémique, dont la gravité est fort variable. La mortalité chez les Chinois, tout en étant sérieuse, est loin d'atteindre celle du choléra, qui, cet été, d'après les renseignements que nous avons pu nous procurer par le Tsoungli Yamen, a fait, dans la population de Pékin, plus de 50,000 victimes. Le typhus, nommé *yen-ping* par les Chinois, est redouté des indigènes, à telle enseigne qu'il n'est pas rare de voir dans les hôpitaux, au moment des épidémies, les infirmiers abandonner leur poste, par crainte de la contagion.

Tout ce qui va être dit ne concerne que le typhus de Pékin; nous n'avons pas eu, en effet, l'occasion de l'observer dans d'autres parties de la Chine. Nous n'avons eu que très peu de Chinois à soigner pendant cette épidémie; cependant, d'après les cas que nous avons pu constater, soit à l'hôpital français du Nan T'ang, soit à l'Orphelinat de Cha-la-eul, nous pouvons conclure que les formes atypiques ne sont pas rares.

Les Européens qui résident à Pékin (membres des Légations ou fonctionnaires du service des Douanes impériales) sont rarement atteints par le typhus. Ils vivent isolés de la population, et n'ont de rapports qu'avec des domestiques indigènes bien nourris et propres. Il n'en est pas de même pour nos Missionnaires et nos Religieuses. En rapports fréquents, et même constants, pour certains d'entre eux, avec les Chinois, se nourrissant plus ou moins bien, observant en général très mal les plus élémentaires principes de l'hygiène, ils paient à la maladie un très lourd tribut.

À notre arrivée à Pékin, nous avons souvent entendu parler d'une sorte de maladie typhique, à laquelle on donnait le nom de "fièvre de Pékin." Nous avons eu au printemps de 1895 l'occasion d'étudier, dans une de nos Missions, une épidémie de cette fièvre. Les observations, prises au jour le jour, nous ont permis de conclure que cette sus-dite fièvre de Pékin n'était autre que le typhus exanthématique présentant quelques différences avec celui qu'on rencontre en Europe, ainsi que le prouvera la description suivante.

Dans le petit village de Cha-la-eul, situé au nord-ouest de Pékin, à 700 ou 800 mètres de la muraille de la ville, se trouve une Mission où des Frères Maristes élèvent les orphelins de la Sainte-Enfance.

Les Frères sont assez jeunes (23 à 24 ans en moyenne), vivent assez mal, et, surtout, du fait de leur organisation, ne peuvent bien souvent faire autrement que d'enfreindre les règles

* Communication faite à l'Académie de Médecine de Paris.

de la plus rudimentaire hygiène. Ils sortent peu ou pas de leur Mission; vivent constamment au milieu d'enfants sales, pouilleux et morveux et, chacun à leur tour, sont obligés de coucher dans les dortoirs de leurs élèves. Il faut avoir pénétré dans une de ces salles, le matin, pour se faire une idée des odeurs infectes qui s'en échappent, mélange de gaz, sueur, matières fécales, crasse, ail, le tout, combiné à l'odeur *sui generis* du Chinois, laquelle est déjà particulièrement désagréable pour un odorat européen.

Dès le début du printemps, des enfants furent atteints de fièvre; ils étaient très abattus, constipés, avaient la peau très chaude, les yeux injectés, d'après ce que m'ont dit les Frères, car à ce moment-là je ne les ai pas vus.

Il y avait en général une éruption. L'affection durait, en moyenne, une douzaine de jours, puis une brusque amélioration survenait, très souvent après une transpiration abondante. Ces symptômes, malgré leur peu de précision, me firent penser à la possibilité d'une épidémie de typhus parmi les orphelins.

Dans la deuxième quinzaine de mars, un Frère est atteint de fièvre, courbature, inappétence, après quelques jours de malaise. Il était malade depuis quelque temps, quand je le vis, et pus constater, le jour de ma visite, une éruption de taches rosées lenticulaires disparaissant sous le doigt. Le malade se plaignait de céphalalgie, de douleurs lombaires, avait les yeux injectés; le pouls était très rapide, et on percevait, à l'auscultation du cœur, un bruit de galop. Quelques jours après, tout était rentré dans l'ordre, et le patient ne conservait de cette maladie qu'un état anémique très marqué.

Je ne cite ce cas que pour mémoire, n'ayant pu le suivre. Voici maintenant l'évolution de l'épidémie que j'ai pu étudier de très près.

Le 28 mars, un Frère de Cha-la-eul passe l'après-midi dans la chambre du malade dont nous venons de parler: c'était, depuis le début de la maladie de ce dernier, la première fois qu'il se trouvait en rapport avec lui. Le lendemain, il éprouve du malaise de la courbature, et trois jours après, le typhus était nettement déclaré.

Le 1er avril, un deuxième Frère est atteint; le 17, un troisième est pris à son tour. Le même jour, au Collége franco-chinois, situé dans Pékin, un Frère est également atteint. Ce dernier est allé, la veille, passer son après-midi dans la chambre des malades. Le 22, le Supérieur, qui s'est surmené à soigner ses malades, éprouve du malaise, de la lassitude générale; et, le 25, la maladie est confirmée.

Le 13 mai, un nouveau cas se montre chez un Frère du collége, lequel est allé voir les malades de Cha-la-eul. Le 28 mai, le typhus reparaît à Cha-la-eul, non plus chez les Frères, mais chez les Sœurs de Charité qui occupent une Mission contiguë à celle des Maristes; une Religieuse est atteinte, celle qui est préposée à la buanderie, et par les mains de laquelle passait tout le linge des malades. Il n'y eut pas d'autre cas parmi les Religieuses qui approchèrent la malade; toutes, en effet, avaient été précédemment atteintes. Chez les Frères, tous sauf un ont été touchés. Deux cas, dans la suite, furent observés dans une autre Mission, "le Jen Tsé T'ang," sise dans la portion nord-ouest de Pékin, où les Sœurs élèvent les orphelines de la Sainte-Enfance. Au mois d'août, la Supérieure est atteinte très sérieusement: c'était un cas de typhus récidivé, la Religieuse ayant eu, 30 ans auparavant, une première attaque de typhus. Puis en octobre, une jeune Sœur est à son tour atteinte assez légèrement. De même que les premiers

Frères de Cha-la-eul, les Sœurs ont dû contracter la maladie au contact des enfants malades de leur Mission.

La contagion est donc patente. La durée de l'incubation en Europe est fixée à 12 jours, en moyenne. Ici, dans trois cas bien nets, nous avons vu se montrer les premiers signes prodromiques 24 heures après que le sujet avait été en contact avec le patient.

À ces trois observations personnelles, nous pouvons en joindre une quatrième, qui nous a été donnée par un Père Lazariste. Ce Missionnaire est appelé pour administrer une Religieuse qui se mourait du typhus. Un jour plus tard, lui-même éprouvait les premiers symptômes de cette maladie.

La période prodromique ou d'invasion a une durée moyenne de deux à cinq jours. Dans notre première observation, seulement, notre malade, après un jour de malaise, arrivait à 40°. Pendant cette période la température s'élève vite, mais graduellement, en général. Il y a de légères rémissions matinales. Parfois, un purgatif administré dès le début provoque un abaissement notable de la température.

Les phénomènes généraux, eux-mêmes, s'amendent pendant 15 à 24 heures, permettant de croire à un léger embarras gastrique, jugé par les évacuants. Mais bientôt les phénomènes ne tardent pas à se reproduire, et, souvent, avec plus d'intensité.

Pendant cette phase prodromique, les accidents présentés sont ceux que l'on voit dans toutes les maladies infectieuses; le début, dans certains cas, a beaucoup d'analogie avec une attaque d'influenza. Le malade se sent courbaturé; il éprouve des frissons, ses jambes ne le portent que difficilement, les mollets, les cuisses, les régions lombaires, interscapulaires, les hypocondres sont douloureux. Il a des vertiges, des bourdonnements d'oreilles, la marche n'est pas sûre; il titube parfois, il manque de tomber par moment, il a des défaillances.

Le symptôme dominant est la céphalalgie, qui, d'emblée, est très pénible; céphalalgie gravative, en casque, enserrant la tête dans un cercle douloureux que le moindre mouvement exagère.

Non seulement les muscles, mais les articulations sont le siége de douleurs. Le cuir chevelu présente une hyperesthésie des plus pénibles. La peau est sèche, la langue blanche; le malade a des nausées. Signalons des épistaxis légères. Les yeux sont injectés, larmoyants. Il y a toujours de la photophobie d'intensité variable. Nous avons vu aussi la diplopie et l'amblyopie. La face est congestionnée, la tête chaude. La soif est vive, l'inappétence parfaite. Les selles rendues ont déjà une odeur quasiment fétide. Dans un cas, nous avons vu revenir les règles, et cette perte de sang a fait, momentanément, céder la rachialgie. La nuit, le sommeil est agité, il y a un peu de délire; à ce moment, la température atteint 38°.9, 39°, avec de légères rémissions matinales. Si nous examinons les tracés, nous voyons que c'est entre le troisième et le quatrième jour de la maladie que le thermomètre atteint 40°, chiffre qui est parfois dépassé. Dans un seul cas, la maladie eut une invasion brusque et la température fut, le deuxième jour, 40°.

L'invasion peut être particulièrement bruyante. Il y a peu de temps nous avons vu la maladie débuter chez la Supérieure de l'hôpital, par un point de côté extrêmement violent siégeant à droite; de la dyspnée, et des douleurs généralisées à toutes les articulations, par-

ticulièrement à celles de la colonne vertébrale. Le point de côté dura 20 heures, mais les douleurs articulaires allèrent en augmentant.

À ce moment, nous entrons dans la *période d'état de la maladie.* Le thermomètre restera pendant une douzaine de jours à 40°, et même au-dessus, avec de légères rémissions matinales.

Tout à fait au début de cette période d'état survient une *éruption.* Elle se montre, en moyenne, entre quatre et six jours après la manifestation des premiers symptômes de la maladie, c'est-à-dire qu'elle se produit 24 à 36 heures après que la température a atteint son acmé. Cette éruption n'a, pour ainsi dire, pas d'effet sur la courbe thermique; dans un seul cas, nous avons pu noter un léger abaissement de la température au moment de son apparition. Le patient n'en éprouve aucune sensation de mieux dans son état.

L'éruption n'a rien de fixe dans son mode d'apparition. Tantôt elle va par acoups, tantôt elle marche d'une façon progressive et se généralise très vite. Ainsi, dans une de nos observations (2), nous voyons un jour deux taches se montrer dans la fosse iliaque; pas une seule ailleurs. Puis, le lendemain, l'éruption envahit nettement toute la surface du corps. Dans la majorité des cas, l'éruption a commencé par les parties découvertes: mains, avant-bras et portion de la poitrine que la chemise ne recouvre pas. De là, elle gagnait le thorax, le ventre, les membres inférieurs et le dos du pied. Dans certaines observations, nous notons un développement du réseau veineux sous-cutané, dessinant des aréoles sur le dos du pied et sur la poitrine. D'autres fois, l'éruption est accompagnée de petits rashs à la nuque sur le cou du pied.

L'éruption peut parfois être très discrète. Tout récemment (janvier 1896) nous avons observé un cas de typhus chez une Religieuse et nous n'avons noté que quatre ou cinq taches: deux dans la paume des mains, et autant sur la poitrine. L'éruption ne franchit pas la base du cou. Dans un cas, cependant, nous avons vu ce dernier, et la face elle-même envahis par les taches, qui étaient très confluentes sur les joues et le front, où elles formaient, par endroits, de petits placards très rouges.

Dans presque tous les cas, nous avons noté la présence de taches dans la paume des mains. L'éruption met deux ou trois jours pour se produire entièrement.

Ces taches, au début, sont des macules, disparaissant sous la pression des doigts. Leur teinte est rosée ou un peu rouge, rappelant celle de la rougeole. Leur dimension varie de celle d'une tête d'épingle à celle d'une lentille. Leur forme n'a rien de fixe. Dans la grande majorité des cas, elles sont rondes ou ovalaires; quelques-unes sont dentelées un peu en croissant. Autour de la macule se voit une petite aréole de teinte rose pâle. Dans certains points—bras, avant-bras, dos des mains—ces macules sont très confluentes. Elles se fusionnent; leur teinte paraît plus rouge, et elles forment de petits rashs, qui semblent faire un relief; mais ce dernier n'est pas perceptible au doigt. Après un jour ou deux, elles deviennent papuleuses, ce sont des maculo-papules. Quelques-unes présentent même en leur centre un petit point violacé, qui ne disparaît pas toujours sous la pression digitale. Celles qui occupent la paume des mains, au nombre de 8 à 15 par main, sont régulières, rosées, comme celles de la typhoïde, et les plus volumineuses n'ont jamais un diamètre supérieur à celui d'une petite lentille.

Aux jambes, aux cuisses, elles sont moins abondantes, et ne se voient guère qu'à la partie interne, là où la peau présente le maximum de finesse.

Cette éruption ne provoque pas de démangeaison. Cependant, dans les points où elle est très confluente, il y aurait un léger prurit.

Ces taches varient, non seulement d'un jour à l'autre, mais d'un instant à l'autre, dans l'intensité de leur coloration.

Ainsi, les taches des parties découvertes sont généralement beaucoup plus accusées que celles des régions protégées par les couvertures; et ces dernières prennent une teinte plus vive, dès qu'elles sont quelques instants exposées à l'air.

L'éruption disparaît peu à peu; mais souvent, pendant cette période de régression, des taches nouvelles se montrent dans les points où les premières sont totalement ou à peu près effacées. La durée moyenne de l'éruption peut être, chez les Européens, évaluée à une semaine.

Chez un Chinois, dont nous avons pris l'observation (8), l'éruption a duré 12 jours, revêtant, à la fin, le caractère de pétéchies punctiformes.

Quand les taches ont disparu il n'est pas rare de voir à leurs places, spécialement sur le dos des mains, de petits points blanchâtres, correspondant à la position primitive de taches rosées et donnant à la peau un aspect marbré; quelquefois, la teinte est légèrement marron, rappelant une vieille ecchymose en voie de régression. La disparition des taches n'est pas suivie de desquamation comme le fait s'observe dans le typhus d'Europe.

Une desquamation peut s'observer à la fin de la maladie, ainsi que nous le dirons plus loin; mais il n'y a pas de rapports à établir entre elle et l'éruption.

Non seulement l'éruption peut se faire par poussées irrégulières, mais une *deuxième éruption* peut se produire, un certain temps après la disparition de la première. Nous avons observé deux fois le fait. Chez un de nos malades (5), l'éruption disparaît au bout de quatre jours; trois jours plus tard, nouvelle poussée. Chez un autre, la première éruption dure trois jours; deux jours après, se montrent de nouvelles taches rosées.

Nous devons insister sur ce fait que jamais les taches n'ont eu le caractère pétéchial, formant les marbrures ecchymotiques caractéristiques du typhus d'Europe. Elles avaient une très grande analogie avec les taches rosées de la dothienentérie. Dans les cas qui se sont terminés par la mort, et dans un autre récidivé, l'éruption présenta au bout d'un certain temps, de petits points violacés, analogues à des piqûres de puces; et quelques taches rosées eurent à leur centre un point pétéchial, ne disparaissant qu'imparfaitement sous la pression des doigts. Aussi, croyons-nous, que la teinte violacée des taches est d'un très sérieux pronostic.

La période d'état dure, en moyenne, 10 à 12 jours, se termine par une crise, un abaissement brusque et notable de la température, et un passage soudain d'un état grave à un état de mieux être très manifeste. Elle est caractérisée par l'exagération de tous les symptômes du début, et par un certain nombre d'autres propres à cette phase de la maladie et bien caractérisés.

Le malade est dans un état de stupeur bien marqué; mais, fait intéressant, malgré son abattement, il lui reste encore une certaine force qui peut même permettre à quelques-uns d'entre eux de se lever, d'aller seuls à la chaise percée. Il y a même des sortes de formes ambulatoires; le malade, malgré la fièvre très vive, l'abattement, la céphalalgie, peut encore marcher. Un Chinois, malade depuis cinq jours, vint, de très loin, avec une température de 40°.4, nous

demander, à pied, une consultation, à la Légation de France (8) et put, en se promenant, gagner l'hôpital, distant de 2½ kilomètres environ.

Le facies ne permet pas de juger de l'état du patient. Il est indifférent à tout ce qui se passe autour de lui; la figure est rouge et chaude: parfois les deux joues sont congestionnées, au point de former comme un relief écarlate, limité par un bord plus foncé, rappelant beaucoup la couleur et la disposition de l'érysipèle; les oreilles sont froides, cyanosées, pour ainsi dire dans certains cas, et cette couleur bleuâtre jointe à leur refroidissement, tranche singulièrement sur la congestion et la chaleur de la face. L'œil injecté et mort, les pupilles inégalement dilatées, l'angle interne de l'œil garni de mucosités, qui tendent à accoler les paupières, le malade reste immobile, couché, en général sur le dos. Des mouvements involontaires, soubresauts tendineux, contractions fibrillaires, se produisent sans cesse. La langue est blanche et humide, rosée sur les bords et la pointe, dans les premiers jours; elle se sèche peu à peu, devient râpeuse. Les lèvres, les dents sont enduites, assez tardivement, de fuliginosités. Des mucosités épaisses et gluantes font adhérer parfois la base de la langue à la voûte palatine, encombrent la gorge et gênent la phonation. Dans d'autres cas, la gorge est sèche et luisante; des vésicules d'herpès peuvent se montrer sur les lèvres et les amygdales; l'haleine est fétide.

La peau est sèche et brûlante; et, en la frottant avec l'ongle, on peut observer la raie méningitique.

Interrogé, le malade peut presque toujours répondre, et dire qu'il souffre horriblement de la tête. Cette céphalalgie gravative qui fait dire au patient que tout se démolit dans sa tête, s'exagère par le bruit, la lumière, le mouvement et nécessite la calotte de glace. Il accuse un anéantissement profond, se plaint de rachialgie, de douleurs dans les mollets, dans les articulations, de points de côté, de contractures musculaires pénibles. Les muscles, eux aussi, sont très sensibles, et deux de nos malades poussaient des cris dès qu'on pressait, même légèrement, les masses des mollets. Les os, eux-mêmes, sont douloureux.

Les douleurs musculaires, et surtout celles des articulations, sont tellement vive qu'elles dominent parfois la scène et donnent à la maladie un caractère spécial: nous avons observé un cas de ce genre, qu'on pourrait désigner sous le nom de "typhus arthralgique." Pendant toute la période d'état et les premiers temps de la convalescence, notre malade éprouva dans toutes les articulations, surtout dans celles de la colonne vertébrale, des genoux, cous de pied, poignets des douleurs très violentes, qui la condamnaient au repos absolu et lui faisaient pousser des cris au moindre mouvement imprimé. Les articulations n'étaient, cependant, ni rouges, ni gonflées.

Quelques patients sont dans un état de défaillance permanent avec menace perpétuelle de syncope.

Tantôt le malade est très agité, loquace, impatient dans son lit, cherchant à se lever. Tantôt, au contraire, il est triste, répond à peine, ou par monosyllabes incompréhensibles à vos questions. Il marmotte entre ses dents, a des mouvements de pieds, de mains, cherche à saisir des objets imaginaires. Trois fois nous avons constaté de *l'aphasie.* Chez un Frère, cet état ne dura que quelques heures; mais chez une Religieuse, à deux reprises, l'aphasie persista pendant 24 heures. Assise dans son lit, semblant ne pas entendre les questions qu'on lui posait, elle avait l'aspect d'une lipémaniaque, l'œil humide et inquiet, la larme facile, tenant, entre ses mains, un coin de son drap, dans l'attitude de la couture, semblant ne plus vivre dans

le milieu où elle se trouvait et n'ayant plus conservé que quelques mouvements de pudeur qui la faisaient se recouvrir la poitrine, à mesure que nous la découvrions pour l'ausculter.

La surdité est un accident presque constant. Elle est précoce. Au début, ce n'est qu'une très légère dureté d'oreille, avec bourdonnements, coups de sifflet de locomotive. À mesure que la maladie évolue, la surdité s'accentue, et il faut, chez certains malades, crier à haute voix pour arriver à se faire entendre et encore ne réussit-on pas toujours très bien.

Nous avons parlé de l'injection oculaire et de la photophobie du début; celle-ci est parfois assez vive pour que le malade demande à être maintenu dans l'obscurité. D'autres troubles oculaires se montrent. Au premier chef, l'amblyopie: les objets ont peu de netteté dans leurs contours; les malades ont un nuage devant les yeux. Il peut y avoir de la diplopie et même de la dischromatopsie. Les pupilles sont très fréquemment inégales.

Le patient repose mal, les nuits sont mauvaises et agitées. Des rêves, les plus singuliers, se succèdent. Plusieurs de nos malades se plaignaient d'avoir quelqu'un à côté d'eux, dans leur lit. Le malade s'agite, pour expulser ce visiteur importun. Quelques-uns ont un délire violent, à idées à peu près fixes; d'autres restent somnolents, et poussent de temps à autre de petits cris inarticulés. D'autres, calmes en général, ont présenté, certains jours, une agitation extrême; ils étaient angoissés, anxieux, et tous ces phénomènes cédaient, comme par enchantement, dès qu'un lavement avait fait expulser les scybales ou produit une débâcle.

La constipation opiniâtre, qui est la règle en Europe, est ici l'exception. Nous croyons intéressant de faire ressortir ce fait, que presque toujours on peut très facilement entretenir la liberté du tube digestif avec un purgatif léger, comme le calomel. Dans un cas seulement, nous avons pu constater une tendance très nette à la constipation; mais les purgatifs en eurent raison. Chez les Chinois, la constipation est, paraît-il, la règle. Nous avons vu, à Cha-la-eul, un novice traité par un confrère chinois, rester pendant 11 jours sans aller à la selle. Les selles sont fréquentes, 10 à 12 par jour et autant pendant la nuit, assez abondantes, jaunâtres et particulièrement fétides.

Le ventre reste souple, facile à explorer. Quelquefois, nous avons noté un léger météorisme, ou un peu de tension des muscles abdominaux. La palpation peut faire percevoir du gargouillement dans la fosse iliaque, mais rarement elle est douloureuse. Quelques malades accusent des coliques, des douleurs, des crampes épigastriques, des nausées qui cédent à la potion de Rivière. Nous avons noté l'incontinence des matières fécales chez les malades qui ont été gravement atteints, et chez ceux dont le typhus a eu une terminaison fatale.

Les malades supportent bien l'alimentation et peuvent prendre facilement. On peut voir de la dysphagie, mais celle-ci résulte soit d'une légère angine, soit des mucosités qui accolent la langue et encombrent la gorge. Nous avons, chez une Religieuse, pu observer un cas d'œsophagisme.

La malade ne pouvait prendre aucun aliment solide. Les liquides passaient, mais en très petite quantité. Cette femme disait que les liquides n'arrivaient pas dans son estomac, et éprouvait de la gêne dans toute la région du cou; puis, au bout d'un certain temps, une heure et plus, parfois, le liquide était lentement, comme en bavant, rendu par regurgitation.

Pendant cette période d'état, les épistaxis ne sont pas rares, épistaxis peu considérables, caractérisées surtout par quelques gouttelettes de sang, qui s'écoulent le matin, au moment où le patient se mouche.

La *fièvre*, durant cette période d'état, reste élevée. Les rémissions matinales sont légères. Elle oscille aux environs de 40° et baisse, pendant la nuit, de quelques dixièmes. Les chutes de 1 degré sont rares. L'apparition de l'éruption ne modifie pas le tracé thermique; il en est de même de la quinine, l'antipyrine, l'acide salicylique. Les bains et lavements froids produisent parfois, pour quelques instants, un léger abaissement de la température, qui peut varier de $\frac{8}{10}$ de degré à 1 degré. Une transpiration abondante, soit spontanée, soit produite par le gingembre, a pu, dans certains cas, faire descendre le thermomètre. Nous en avons un exemple bien net dans notre 8e tracé: de 40°.2, la température descend à 37 degrés.

La température, chez tous les malades, était prise plusieurs fois dans la journée; et, d'après toutes nos observations, nous pouvons conclure que les températures extrêmes, minima et maxima, sont atteintes à 9 heures du matin et à 8 heures du soir.

Très souvent, la fièvre procède par bouffées intermittentes, et pendant ces périodes d'accalmie la température peut baisser de plusieurs dixièmes de degré. Mais ces rémissions, pendant lesquelles le malade éprouve un mieux être, sur lequel il attire notre attention, sont courtes, et durent au maximum de une heure à une heure et demie.

La fièvre se maintient à ce taux élevé pendant toute la période d'état, c'est-à-dire pendant 12 à 14 jours, en moyenne. La chute brusque de 1½ à 2 degrés est le meilleur symptôme, indiquant que la maladie va entrer dans une phase nouvelle, c'est-à-dire la convalescence, dans laquelle on entre brusquement. La température arrive à la normale, non pas brusquement, mais par chutes successives et rapides. Ainsi, si nous consultons nos tracés, nous voyons que, dans la majorité des cas, il a fallu deux ou trois jours pour que le degré normal fut atteint.

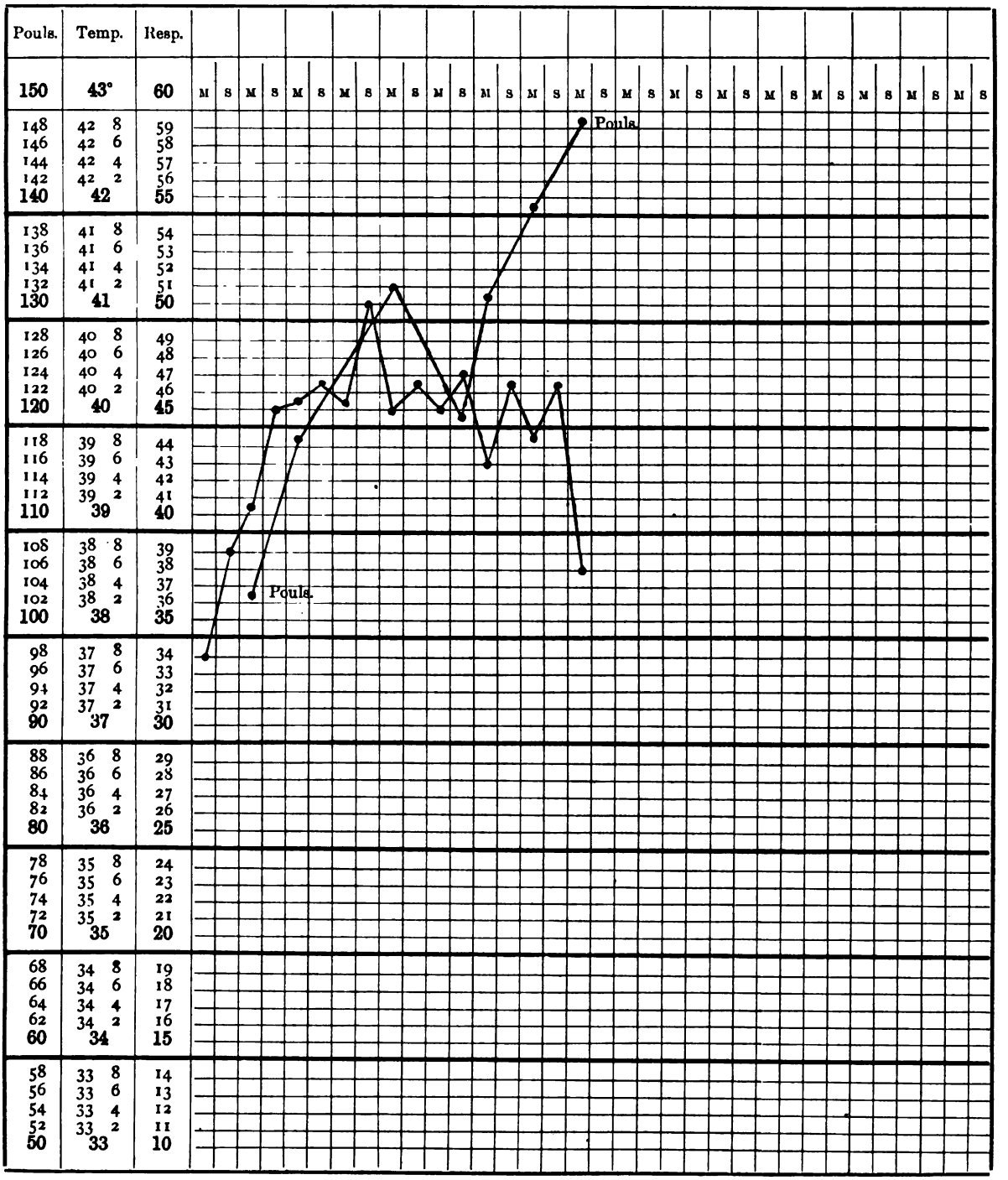
Il y a généralement parallélisme entre l'ascension de la température, la rapidité du pouls et celle de la respiration. Certains de nos tracés sont, à cet effet, des plus typiques.

Dans les cas mortels, par exemple, au moment où la chute brusque de le température, prodrome de l'accident fatal, se produit, le pouls s'accélère d'une manière effrayante.

Le *cœur* est l'organe le plus rapidement et le plus fréquemment touché par le poison typhique. Il est, croyons-nous, indispensable au médecin de le surveiller de la manière la plus attentive pour l'empêcher de faillir. Les renseignements tirés de l'examen de cet organe sont de la plus haute importance, au point de vue du pronostic.

Le premier phénomène qui attire notre attention est l'accélération des battements du cœur. Dès les premiers jours, le pouls atteint 120. Il est petit, filiforme, souvent dicrote. Nous avons dit que sa marche était parallèle à l'ascension de la température. Il peut atteindre 140, dépasser même ce chiffre, et se maintenir pendant plusieurs jours à ce point élevé. Cette rapidité exagérée du pouls ne nous a pas semblé, dans le typhus, entraîner un pronostic aussi grave que celui que TROUSSEAU lui accordait dans la fièvre typhoïde.

À l'auscultation, on perçoit, dès les premiers jours, un éclat particulier au deuxième bruit de l'artère pulmonaire. Ce timbre spécial est l'indice prémonitoire, en général, d'un dédoublement du deuxième bruit de la base, qui s'est montré d'une façon assez constante. Ce galop, tantôt est intermittent, tantôt perçu d'une façon continue pendant une dizaine de jours. À mesure que la maladie fait des progrès, le cœur prend un caractère de plus en plus fœtal; mais le bruit de galop n'est pas le seul qui se puisse entendre. Nous avons noté dans une observation (6) un frottement péricardique. Dans presque toutes nos observations nous


Pouls. Temp. Resp.
150 43° 60
148 42 8 59
146 42 6 58
144 42 4 57
142 42 2 56
140 42 55
138 41 8 54
136 41 6 53
134 41 4 52
132 41 2 51
130 41 50
128 40 8 49
126 40 6 48
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88 36 8 29
86 36 6 28
84 36 4 27
82 36 2 26
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78 35 8 24
76 35 6 23
74 35 4 22
72 35 2 21
70 35 20
68 34 8 19
66 34 6 18
64 34 4 17
62 34 2 16
60 34 15
58 33 8 14
56 33 6 13
54 33 4 12
52 33 2 11
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M S M S M S M S M S M S M S M S M S M S M S M S M S M S M S M S M S M S
Pouls.
Pouls.

signalons un affaiblissement notable du premier bruit à la pointe, indice d'une lésion plus ou moins sérieuse du muscle cardiaque. Dans une autre, un souffle aortique au premier bruit; dans un troisième (7), le premier bruit pulmonaire était râpeux. Le bruit de galop a été le trouble cardiaque le plus fréquent, vu qu'il figure dans six sur neuf de nos observations. Enfin, nous l'avons également rencontré chez une Religieuse et un novice chinois dont nous n'avons pas pris l'observation: soit 8 fois sur 11 cas par nous examinés.

Comme phénomènes subjectifs du côté du cœur, les malades ont accusé parfois des battements douloureux, et de légers phénomènes d'angine de poitrine: point douloureux précordial, sensation de constriction.

Dès que nous voyions le pouls filiforme atteindre 125 ou 130 pulsations, nous donnions, pendant quelques jours, soit de la caféine, soit de la digitale.

L'organe réagissait assez bien, et la tension artérielle augmentait notablement. Dans les deux cas terminés par la mort, le cœur a rapidement été profondément lésé; et, même avec des doses répétées de caféine en injections, nous n'avons pu obtenir le moindre relèvement de la tonicité de la fibre cardiaque.

La fièvre, l'accélération du pouls, la dyspnée vont de pair. Cette dernière parfois excessive, puisqu'elle peut atteindre 44 et 48 inspirations par minute, ne peut être expliquée par l'état de l'appareil respiratoire. La gorge est souvent rouge; il peut y avoir une angine légère, des mucosités plus ou moins gluantes peuvent encombrer les fosses nasales et l'arrière-gorge, mais à la percussion, on trouve normale la sonorité thoracique.

L'auscultation fait percevoir au sommet et dans la partie médiane quelques ronchus et sibilances; à la base, il y a toujours de la congestion, généralement légère. Les crachats sont clairs et aérés, quelquefois un peu gommeux et jaunâtres. Le seul accident pulmonaire que nous ayons constaté est une pneumonie; encore, cette dernière s'est elle déclarée chez une de nos malades au moment de la convalescence. La température élevée et l'état du cœur peuvent, à notre avis, expliquer suffisamment cette dyspnée.

On pourrait supposer, à priori, qu'une maladie qui revêt dans sa marche, dès le début, un caractère aussi nettement infectieux que le typhus de Pékin, devrait de bonne heure, toucher la *rate*. Il n'en est rien, cet organe semble subir assez peu l'effet de l'infection. Dans les premiers jours, en effet, la région splénique est peu ou pas sensible à la pression. Néanmoins, dans le dernier cas par nous observé, à la Mission du Jen Tsé T'ang (janvier 1896), sur une jeune Sœur originaire de Macao, la région splénique fut d'une sensibilité exagérée à la pression; et cependant la maladie fut très bénigne.

La percussion ne montre pas la glande augmentée de volume, ce n'est guère qu'à partir du cinquième jour que l'on peut constater un accroissement de ses dimensions; mais cette augmentation de volume n'est jamais comparable à celle qu'on constate dans la fièvre typhoïde. Les dimensions moyennes étaient 8½ × 14 cm., 10 × 12 cm. Une fois seulement nous avons trouvé une splénomégalie sérieuse, 17 × 22 cm. (3).

Le *foie* n'a lui-même présenté aucune modification intéressante. Peut-être, dans une observation ou deux, peut-on mentionner une sensation vaguement obtuse, mais sans grande importance.

Chez la Religieuse dont nous venons de parler, la région hépatique, sans être aussi sensible que la rate, était cependant douloureuse, quand on la comprimait.

Chez le Chinois dont nous avons pris l'observation (8), le foie et la rate ont, pendant toute la période d'état, et les premiers temps de la convalescence, été nettement très douloureux.

Au début de la période d'état, la *quantité d'urine* diminue, sa couleur est plus foncée. Le taux de l'urée peut être fixé à une moyenne de 13½ à 14 gr. L'urine est très riche en sels uratiques, qui se précipitent par refroidissement.

L'albuminurie s'est montrée dans trois cas seulement, et encore était-elle légère.

La quantité d'urine rendue dans les 24 heures subit une augmentation très manifeste sous l'influence des lotions et surtout des lavements phéniqués froids. Ce phénomène s'est montré d'une façon constante dans toutes nos observations. À partir du 10e jour en général, la quantité d'urine augmente naturellement, atteignant 1,800 gr. et même 2 litres.

Les *troubles de la miction* ne sont pas rares. Trois fois nous avons noté de la rétention, tantôt légère, une fois assez sérieuse, car elle a duré 24 heures. Cette rétention n'est pas un phénomène de début. C'est entre le 8e et le 12e jour qu'on la voit se produire. Deux fois, nous avons noté de l'incontinence.

La *peau*, au début, est d'une sécheresse extrême. Nous avons même dans quelques cas cru bon de provoquer la transpiration au moyen d'une infusion de gingembre. Mais bientôt une transpiration abondante s'établit, nécessitant parfois le changement du linge à plusieurs reprises dans les 24 heures.

Chez certains malades, ces sueurs reviennent par bouffées trois, quatre et cinq fois dans la journée et la nuit, surtout quand on approche de la période de convalescence. Elles ont souvent été particulièrement abondantes dans la matinée. Fait intéressant à signaler, elles cessaient comme par enchantement, après l'ingestion d'une infusion de café noir. Ces sueurs ont une odeur fade, quasiment cadavérique, écœurante.

Ces crises de sueurs sont suivies en général de sudamina abondantes.

Les malades ont tous une *odeur* assez pénétrante, rappelant, à l'intensité près, celle des sueurs. Nous n'avons jamais eu l'occasion de voir de typhiques en Europe, mais tous nos classiques sont univoques dans leur description de cette odeur bien spéciale des malades qui, dès en entrant, permet, en quelque sorte, d'établir le diagnostic. Ici, l'odeur n'est pas à ce point accentuée, et nous n'avons pu établir de relations entre l'odeur du patient et le degré de gravité de la maladie, comme certains auteurs prétendent pouvoir le faire dans les pays de l'Occident. Il est vrai que dans le milieu où nous observions, l'odeur de malade se mêlait à celle des Chinois et qu'il était difficile à notre olfaction de bien distinguer ce qui revenait à l'un et à l'autre.

Les *troubles trophiques* du typhus doivent, croyons-nous, être rares. Sur neuf observations, nous ne les avons constatés qu'une fois. Encore s'agissait-il d'un sujet qui avait eu une rechute, dont la maladie avait été très longue. Des escarres se montrèrent à la pointe des omoplates, aux fesses et aux talons ; ces dernières furent particulièrement lentes à cicatriser.

Pendant cette période d'état, le seul symptôme qui subisse une amélioration est la céphalalgie dont l'intensité diminue parfois à partir du cinquième jour.

Il est assez intéressant de signaler que pendant cette période d'état l'appétit reste assez bon ; malgré la fièvre et l'abattement, les malades peuvent s'alimenter d'une façon suffisante

et prennent bien du lait, des jaunes d'œuf, du jus de viande et surtout de l'alcool sous toutes les formes.

La période d'état dure en moyenne de 12 à 13 jours. Les Missionnaires et les Religieuses qui ont eu, bien souvent, l'occasion de voir de près le typhus, disent régulièrement que la période dangereuse de la maladie s'étend du 12e au 15e jour.

À ce moment, en effet, la maladie se juge par une *crise.* Celle-ci est des plus variables. Dans les cas les plus simples, une abondante sudation survient, qui est suivie d'une chute de 1½ à 2 degrés. Mais il n'en est pas toujours ainsi, et les malades passent par des crises extrêmement pénibles, sur le pronostic desquelles on ne saurait être trop réservé. Un de nos malades avait été agité toute la matinée. Vers 2 heures, il se sent tout à coup défaillir et a le sentiment d'une mort prochaine. Cet état de défaillance dure pendant deux heures, avec claquement de dents, frissons, refroidissement et cyanose des extrémités; petitesse extrême du pouls. Puis vers 4 heures, subitement, il se sent mieux, les idées s'éclairent. Il commence à reconnaître les gens qui l'entourent et à s'entretenir avec eux. À partir de ce moment la température tombe et le malade repose. La fièvre se montre encore dans la soirée, mais le lendemain matin, elle était à 38°, soit 2 degrés de différence. Le patient accusait un mieux être des plus manifestes. C'était la fin de la période d'état. Il n'y a pas besoin, en effet, que la température arrive à la normale pour que le malade lui-même attire notre attention sur cette amélioration qui est d'une haute valeur pronostique.

La céphalalgie diminue notablement et peut même cesser. Il ne reste que de la lourdeur de tête, de la tendance au vertige. Mais le sommeil est bon. Le malade dort bien; quelques-uns ont de véritables crises de sommeil: ils dorment la nuit et le jour. Tous les patients accusent un sentiment de lassitude considérable. Ils se trouvent anéantis. Le moindre mouvement leur est pénible; s'ils veulent s'asseoir sur leur lit, aller à selle, aussitôt se produisent de l'essoufflement, une respiration irrégulière, des palpitations, des vertiges, des bourdonnements d'oreilles.

La surdité persiste et durera même longtemps encore. La congestion de la conjonctive diminue, les pupilles sont dilatées, quelquefois inégales, la vue reste souvent trouble.

La langue s'étale, devient humide et blanche, mais des mucosités gluantes accolent la langue au voile et à la voûte du palais, encombrent la gorge, et par leur abondance peuvent devenir un obstacle à la déglutition et à la respiration. Elles sont rendues sous forme de muco-membranes visqueuses, blanc-jaunâtre.

À la suite de la défervescence brusque, la température continue à descendre; dans les jours qui suivent, il n'est pas rare de la voir arriver au-dessous de la normale, et s'y maintenir pendant un certain temps.

Le malade passe brusquement d'un état grave à une amélioration soudaine, qui est l'indice de l'entrée en convalescence.

Le malade reste assoupi, somnolent, se plaint de douleurs plus ou moins vagues, de courbatures musculaire et articulaire, de vacuité de la tête; il lui semble sortir d'un rêve, ses idées sont enveloppées comme d'un brouillard. Quelques-uns ont présenté de l'hyperesthésie du cuir chevelu, des démangeaisons.

En même temps que la température baisse, l'accélération du pouls diminue rapidement, pour arriver à la normale. Les bruits anormaux du cœur, dont nous avons parlé, ont déjà disparu au moment où la période d'état prend fin.

La quantité d'urine est considérablement accrue. Les malades rendent jusqu'à 3 litres et plus, véritable débâcle urinaire. L'urine est très limpide, jaune-clair, et la teneur urée augmentée.

Chaque jour le médecin et le malade notent l'amélioration. Il peut arriver qu'après trois à cinq jours de cet état de convalescence une grande faiblesse, sorte d'état syncopal, se produise brusquement, lequel est très effrayant, non seulement pour l'entourage, mais pour le médecin.

Ces accidents, bien connus des Missionnaires, se produisent entre les 17e et 21e jours de la maladie. Il n'est pas rare de voir les malades être emportés, et ceux qui échappent restent 24 à 36 heures dans une situation tout à fait précaire. Nous en avons, tout récemment, observé un cas chez une Religieuse âgée de 73 ans, qui, au 20e jour de sa maladie, alors que déjà elle avait failli être emportée par la crise du 11e jour, tomba dans un état lypothimique considérable, dans lequel elle resta un jour et la moitié de la nuit, et dont elle sortit à notre grande surprise.

Cette période intermédiaire des 17e et 21e jours franchie, il n'y a plus rien à craindre, si ce n'est une complication imprévue, comme une pneumonie, par exemple. La langue se dépouille de plus en plus, les idées s'éclairent; le malade peut, facilement déjà, aller seul à la chaise. Des transpirations abondantes, à odeur fade et écœurante, se produisent, surtout pendant la nuit, et plus spécialement le matin. Quand elles sont très abondantes, elles épuisent le malade. La peau récupère sa souplesse et n'est plus sèche comme autrefois.

Un des meilleurs symptômes est le développement de l'appétit. Nous avons déjà insisté sur ce fait que, pendant la période d'état, le malade s'alimente assez bien. Maintenant, son appétit est violent, et il faut, dans certains cas, le rationner. L'estomac est fort tolérant, et tout ce que nous pouvons constater consiste dans des coliques légères, quelques nausées, et un peu de tendance à la constipation.

Le malade a grand besoin de se refaire. Il est très amaigri, très faible, anémié, les traits de la figure sont tirés, les yeux enfoncés sous les voûtes orbitaires.

Dans les deux cas qui se sont terminés par la mort les malades en étaient encore à la période d'état. L'accident final a été annoncé par une chute brusque de la température, chute analogue à celle qui se produit dans la fièvre typhoïde, soit après une hémorrhagie abondante, soit après une perforation intestinale. Le pouls s'accélère, devient filiforme et atteint 150 et même 160 pulsations. La dyspnée est extrême, les extrémités se cyanosent et deviennent froides. Une sueur visqueuse recouvre le visage et le corps. La température, brusquement tombée, remonte peu à peu; et, au moment de la mort, elle peut être de nouveau à un degré élevé. La température du Frère aux derniers moments duquel nous avons assisté, après être subitement tombée de 40°.6 à 38°.6, était remontée, une demi-heure avant la mort, à 39°.8.

La mort par le poumon doit, croyons-nous, être chose très rare dans le typhus. Nous avons dit que, dans la majorité des cas, on notait seulement une congestion légère. *C'est de l'état du cœur que dépend le pronostic.* Chez les deux malades que nous avons perdus, la mort est survenue par asystolie.

Il est vrai que nous avions affaire à deux sujets rhumatisants, ayant autrefois en des attaques de rhumatisme aigu; le cœur, par conséquent, avait déjà subi une première atteinte. Mais ce que nous avons dit plus haut montre combien le poison typhique touche vite et profondément le cœur. Dès les premiers jours de la maladie ne percevons-nous pas des bruits anormaux? La myocardite typhique est presque de règle.

Les altérations cadavériques du corps, après la mort par le typhus, sont extrêmement rapides et nécessitent, dans ces pays-ci où la fin du printemps est très chaude, une inhumation précoce.

Le malade, avons-nous dit plus haut, entre brusquement en convalescence, et la fin de la période d'état est annoncée par la chute brusque de la température entre le 12e et le 14e jour de la maladie. Dans les jours qui suivent, le thermomètre continue à descendre, arrive à la normale, en 48 ou 72 heures en moyenne, mais ne s'y arrête pas. Des températures très basses peuvent être atteintes 36°.6, 36°.4, 35°.5 et même 35°. Peu à peu la colonne de mercure remonte pour atteindre, en trois à quatre jours, la normale.

La convalescence est longue. Les malades reprennent leurs forces d'une façon lente, mais régulière. Ils ont, en effet, été extrêmement affaiblis par la maladie; leur amaigrissement et leur anémie sont extrêmes. Fort heureusement pour eux, l'appétit se maintient excellent. Pendant la convalescence, nous voyons persister, mais atténués, un certain nombre de phénomènes que nous avons vus, pendant la période d'état, et s'en produire de nouveau.

Les malades restent longtemps durs d'oreilles. Ils ont des bourdonnements, des sifflements. Ces troubles auditifs peuvent se remarquer même après la convalescence. Il en est de même pour ce qui concerne la vision. Les brouillards, les mouches volantes dont nous avons déjà parlé dans la période d'état, sont assez constants dans la convalescence. Mais certains d'entre eux peuvent devenir permanents.

Une Religieuse a attiré notre attention sur ce fait que chez elle, l'acuité visuelle, normale avant sa maladie, avait, depuis ce moment-là, diminué d'une façon très considérable, au point que, pour lire ou coudre, elle avait été obligée, dans les mois qui suivirent l'attaque du typhus, de se servir de verres convexes, et jamais la vision ne récupéra ses qualités primitives.

La voix, faible ou rauque pendant la période de fièvre, redevient normale dès que la température se met à baisser. Un de nos malades cependant, qui avait eu une angine assez sérieuse, avec des mucosités très abondantes qui encombraient la gorge, est resté aphone pendant toute sa convalescence, et la voix n'est revenue qu'au bout d'une trentaine de jours.

La polyurie ne se montre qu'au début de la convalescence. Mais l'intestin, pendant toute cette période, a une certaine tendance à la paresse. Il faut, par des purgatifs légers, prévenir la constipation. Signalons quelques coliques sèches, des borborygmes et des gaz d'odeur infecte rendus par l'anus, surtout le matin, mais contre lesquels le naphtol et la magnésie donnent de fort bons résultats.

Les troubles cutanés sont rares: quelques furoncles, de petits abcès. Nous avons observé chez un Chinois une très belle escarre de toute la peau de la jambe droite dont nous parlerons à propos de complications.

Nous devons également signaler une *desquamation* de la peau des mains et des pieds, constatée chez une Religieuse. La desquamation était formée de petites pellicules revêtant dans la paume de la main le caractère furfuracé ou pytiriasiforme. Quand la malade, après s'être lavé les mains, s'essuyait, elle entraînait une grande quantité de ces petits débris épidermiques qui formaient une sorte de magma.

La même desquamation, mais généralisée aux bras et au tronc, nous a été signalée par une Sœur de Charité chinoise qui avait eu le typhus deux ans plus tôt. Chez elle, au moment de la convalescence, l'épiderme s'enlevait sous forme de placards assez étendus. Cette desquamation n'a aucun rapport avec l'éruption, car les points où se sont montrées les taches rosées, ne nous ont jamais, chez les autres malades, paru desquamer; d'ailleurs, ce qui montre bien qu'il n'y a aucune analogie entre ces troubles cutanés et l'éruption, c'est que nous les voyons se produire chez une de nos malades qui n'a eu que quatre ou cinq taches rosées.

Ces troubles cutanés sont précoces et se produisent dès l'entrée en convalescence. Nous avons pu en observer un que nous pourrions qualifier de tardifs. Un Frère (3) était depuis quelque temps complétement guéri, quand la peau du talon et des orteils se mit à desquamer; et cette desquamation dura plusieurs semaines.

Presque tous nos malades se sont plaints d'éprouver pendant leur convalescence de la raideur et de la douleur dans les articulations. Ces douleurs peuvent siéger aux mains (9); mais les articulations médio-tarsiennes et celles des orteils semblent avoir été particulièrement affectées. Peut-être aussi l'attention a-t-elle été spécialement attirée de ce côté à cause des troubles ou plutôt de la gêne de la marche qui en était la conséquence. Ces accidents seraient chose fréquente dans le typhus de Pékin. Les Frères de Cha-la-eul nous ont dit, en effet, que beaucoup de leurs élèves avaient éprouvé des douleurs identiques aux leurs dans les petites articulations des pieds et des orteils.

Ces lésions articulaires ne sont pas tout. Nous devons signaler des douleurs uniquement limitées aux talons, et surtout à leur face inférieure. Elles sont un obstacle pour la marche, les convalescents faisant porter, pour ne pas souffrir, le poids du corps sur l'avant-pied. Deux de nos malades ont présenté très nettement ces accidents qui, paraît-il, toujours d'après les renseignements fournis par les Frères de Cha-la-eul, sont fréquents chez les Chinois. Dans une de nos observations nous relevons une sensation de froid aux pieds permanente.

La tête est vide, les sensations vertigineuses fréquentes et surtout marquées quand le sujet passe brusquement de la position horizontale à la verticale, ou qu'il relève soudainement la tête. Un de nos malades a gardé pendant très longtemps de la lourdeur de tête, sorte de céphalée des plus pénibles imputable uniquement à son anémie profonde.

Les sujets sont depuis longtemps en convalescence et quelques-uns même sont complétement guéris quand commence la chute des cheveux. *L'alopécie* n'est jamais totale. Les cheveux tombent d'une façon lente, et au bout d'un certain temps, on remarque un éclaircissement très notable du cuir chevelu. Les cheveux, surtout chez la femme, tombent le matin, au moment de la toilette, entraînés par le peigne ou la brosse et ceci pendant deux mois à deux mois et demi.

Il faut aux malades plus de deux mois pour récupérer totalement leurs forces primitives. C'est dire que la convalescence est longue et nécessite une surveillance sérieuse. Mais le malade peut rechuter.

Les *rechutes* du typhus, en Europe, ont été niées par MURCHISON. Nous avons pu en observer une qui a présenté une haute gravité, tant par l'intensité que par la durée des accidents.

La première attaque avait été légère, l'éruption discrète, et au bout d'une quinzaine de jours, tout rentrait dans l'ordre. Il y eut une légère convalescence, puis la fièvre s'alluma de nouveau. Cette rechute dura cinq semaines et présenta tout le cortége des phénomènes typhiques que nous avons décrits plus haut: abattement profond, température élevée, éruption caractéristique, complication cardiaque, hypertrophie de la rate, paralysie du sphincter vésical qui dura pendant huit jours, troubles visuels, intellectuels, auditifs, douleurs lombaires, musculaires et osseuses, albuminurie. Le typhus réveille le rhumatisme dont le patient avait souffert quelques années plus tôt en Australie, et les articulations du poignet, du coude et du cou de pied sont le siége d'arthrites probablement rhumatismales. Des escarres se produisent sur tous les points de pression: talons, sacrum, angle de l'omoplate. Des vers se mettent dans les escarres, gagnent même le creux axillaire qui est le siége d'érythème, et se montrent jusque dans l'angle interne de l'œil, où sont accumulées des mucosités, résultat d'une blépharo-conjonctivite. Il fut du reste facile, grâce à un mélange de poudres d'iodoforme, de talc et de quinquina de se défaire de ces parasites. Mais il ne fut pas aussi aisé de faire guérir les ulcérations dont la cicatrisation fut très longue. Le malade finit par guérir et présenta pendant sa convalescence des douleurs articulaires aux pieds et au point sensible sous le talon.

La durée de cette maladie est très variable. Si on considère la maladie comme terminée au moment où le patient entre en convalescence, nous devons lui assigner une durée moyenne de deux septénaires. Mais nous avons vu que, surtout dans les premiers temps de la convalescence, le malade pouvait être, du 17e au 21e jour, exposé à des accidents des plus graves, mettant sa vie en danger. À partir du 21e jour, le malade est à l'abri du danger, à moins qu'une complication accidentelle, telle qu'une pneumonie, ne vienne tout à coup assombrir le pronostic. Mais lorsque ces périodes de crises sont franchies, le patient, bien que convalescent et récupérant rapidement ses forces, ne peut être considéré comme complétement guéri, puisque nous voyons, à ce moment, des douleurs articulaires, des troubles de la vue, de l'ouïe, de la phonation persister encore. Aussi, étendrons-nous la durée de la maladie, du moment de la manifestation des premiers symptômes au retour complet à la santé, soit une moyenne de 50 à 60 jours.

Comme toutes les maladies infectieuses, le typhus s'accompagne d'un certain nombre de *complications*.* Les unes pourront résulter de l'exagération de l'un des symptômes: fièvre, diarrhée, délire, troubles cardiaques ou pulmonaires. D'autres qui mériteront plutôt le nom d'infections secondaires résultent du développement d'un germe pathogène, autre que celui du typhus, dans un terrain rendu particulièrement réceptif par la maladie elle-même. Dans cette catégorie, nous devons ranger une pneumonie observée chez une Religieuse. De ces infections secondaires, les unes sont précoces, c'est-à-dire qu'elles se montrent dans les premiers temps de la convalescence, ainsi les furoncles, les abcès, les adénites; d'autres sont, au contraire, beaucoup plus tardives, et dans cette série, nous placerons une gangrène de la peau de la jambe droite, une ostéo-myélite et une ostéo-périostite. Voici les trois observations.

* Travail communiqué à la Société Médicale des Hôpitaux de Paris, 19 octobre 1895.

Gangrène cutanée de la Jambe et de la Face dorsale du Pied consécutive au Typhus.

Mou, 25 ans, pâtissier ambulant, né dans le Shansi, entré à l'hôpital le 1er mai, se plaignant de faiblesse et douleurs dans les jambes. Antécédents héréditaires: impossible de savoir; personnels: pas de maladie jusqu'à il y a un mois et demi, où il a eu le typhus, lequel a duré trois à quatre semaines. C'est un fumeur d'opium.

Il raconte qu'à la suite de la fièvre, les deux jambes ont gonflé. Il était convalescent, depuis 10 jours, quand il se mit les jambes dans l'eau froide et il ressentit de la douleur. À quelque temps de là, il remarque sur la face antéro-externe de la jambe droite une phlyctène; et peu à peu la surface de la jambe prit une teinte noir-bleu. Il ne s'en préoccupa pas momentanément, et ce n'est qu'au bout d'une dizaine de jours que, souffrant, il vint à l'hôpital.

Je n'ai pu voir le malade à ce moment, mais la Religieuse qui l'a reçu et soigné dans les jours qui suivirent, me dit que la jambe avait une teinte noir-gris, et qu'elle semblait enveloppée dans une botte qui, partant du genou, s'étendait sur les deux tiers de la face supérieure du pied. La pression n'était pas douloureuse et en tapant sur la peau il en sortait un bruit caverneux. Les mouvements imprimés au membre donnaient la sensation de ballottement de la jambe dans la coque; cette coque fut fendue aux ciseaux sur sa face antérieure trois jours après l'arrivée du malade, ce qui ne provoqua aucune douleur. Cette gaîne résistante était marron à sa coupe et ça et là présentait des stries rougeâtres. Au-dessous, une grande quantité de vers blancs d'une longueur moyenne d'un demi-centimètre.

Quant nous avons examiné le malade nous avons constaté ce qui suit. La jambe dans sa totalité et la partie dorsale du pied sont privées du tégument externe. Sur les deux tiers de la jambe l'aponévrose musculaire d'enveloppe est à nu. Ça et là restent encore quelques petits paquets de tissu cellulo-graisseux.

Les veines saphènes interne et externe se présentent sous forme de cordons et la saphène interne est oblitérée en son milieu par un thrombus long de 4½ à 5 centimètres.

Dans la partie supérieure de la jambe, la peau saine est irrégulièrement déchiquetée, rose violacée; le tissu cellulaire est détruit et il se forme surtout à la face interne du genou des clapiers, qui ont de 3 à 5 centimètres de profondeur. Un seul morceau de peau saine reste sur la région du cou de pied, irrégulièrement découpée de la dimension d'une pièce de 5 francs, d'une forme générale ovalaire à grand diamètre antéro-postérieur.

Au pied, la peau et le tissu cellulaire ont été détruits en grande partie. À la face interne l'ulcération s'arrête à 2 centimètres au-dessus du rebord plantaire. Elle décrit des sinuosités fort élégantes et une traînée ulcéreuse, filant à peu près au milieu du bord interne, descend sous la plante.

À la face externe elle s'arrête à 1 centimètre au-dessus du bord plantaire. En arrière le tiers supérieur de la peau du talon a été intéressé.

Sur la face dorsale l'ulcération décrit une courbe qui passe à 5 centimètres du pouce et 2½ centimètres du petit orteil. La peau est légèrement œdématiée, rouge, violacée et rappelle un rebord de tissu de cicatrice. Les tendons des extenseurs et les veines superficielles sont couverts par le tissu cellulaire qui n'a pas été totalement détruit.

Une ulcération qui n'intéresse pas toute l'épaisseur da la peau occupe la face dorsale du gros orteil.

Poli-adénite inguinale très douloureuse.

La pression aux divers points da la plaie est douloureuse. Les rebords de peau saine sont également très sensibles.

Impossibilité, à cause de la douleur, de placer la jambe en extension.

La sensibilité de la peau de la cuisse de la région plantaire est normale, peut-être même exagérée.

La sensibilité est exagérés au niveau des parties dénudées. L'état général du malade n'est pas bon, bien qu'il n'ait pas de fièvre et qu'il s'alimente. La figure et surtout les paupières sont bouffies, le teint est terreux.

Depuis deux jours (17 mai) le pansement phéniqué a été remplacé par un pansement boriqué, auquel il faut renoncer à cause de l'abondance des vers blancs. Les mouches vertes, qui sont légion, viennent pendant qu'on refait le pansement déposer leurs œufs sur la plaie.

La saphène interne est ulcérée à niveau du point thrombosé et la réparation n'a pas l'air de vouloir se faire.

Malgré le pansement phéniqué que le malade défait régulièrement, les petits vers pullulent et la douleur n'est qu'une sensation constante de chatouillement due au grouillement des parasites.

La gaîne aponévrotique a été dévorée; les muscles en partie rongés sont séparés par places de leurs tendons; les veines profondes externes sont à nu. Le péroné et le tibia sont par places dépourvus de périoste.

La peau, aux limites de la gangrène, se sphacèle et de vastes clapiers pleins de vers se creusent sous elle.

Bon appétit. Pas de douleur.

Dans la soirée, il se sent tout à coup plus faible et meurt vers 10½ heures.

Ostéo-myélite typhique généralisée.

Tchang, 22 ans, domestique. A eu le typhus il y a trois mois (avril). Maladie grave; deux rechutes (?).

Avait déjà un peu souffert des jambes cet hiver. Les douleurs étaient limitées à la crête du tibia, et vives, au point de le gêner pour marcher.

Pendant la convalescence, les douleurs le reprennent dans les jambes, gagnent le bulbe de l'os et le gonflement se montre en haut et en bas des deux côtés. Léger œdème du pied. Il souffre des cuisses, des articulations coxo-fémorale et sacro-iliaque.

Un mois plus tard, les bras et avant-bras sont atteints. Il souffre aussi de la région lombaire et de la colonne vertébrale.

État actuel, le 1er août 1895.—Aux jambes, gonflement au niveau des malléoles et au-dessus. Pression très douloureuse, surtout au niveau des cartilages de conjugaison. Pression sur crête tibiale douloureuse. Crête droite gonflée et léger aspect en lame de sabre. Douleur aux cartilages de conjugaison supérieurs.

Aux cuisses, peu de douleur au niveau du bulbe inférieur. Très vive douleur à la pression coxo-fémorale.

Les os du pied ne sont ni déformés, ni douloureux.

Aux mains, pas de douleur, sauf à la base de l'index et à la tête du quatrième métacarpien gauches. Mais il raconte que jusqu'il y a 15 jours il souffrait des mains, qui étaient gonflées, les doigts légèrement fléchis. Il semble même qu'il en soit résulté une certaine atrophie des muscles de la main.

Aux avant-bras, douleur à la pression, surtout marquée au niveau des cartilages de conjugaison droits et gauches. Il y a un gonflement très manifeste de toute la partie supérieure des avant-bras, de forme rectangulaire, mesurant 10 centimètres de hauteur sur 7 à 8 de largeur.

La peau soulevée n'est ni rouge, ni plus chaude qu'ailleurs. Toute la partie tuméfiée est douloureuse à la pression.

Sur le milieu du cubitus et à une hauteur symétrique des deux côtés se trouve une petite tuméfaction du volume d'une grosse amande, douloureuse à la pression.

Les radius sont indemnes.

Impotence fonctionnelle de l'avant-bras. Les mouvements de flexion et surtout de pronation sont tout à fait limités.

Au coude l'épicondyle présente, à gauche, un point très douloureux.

Douleur à la pression des cartilages bulbaires supérieur et inférieur des bras.

Douleur à la pression du bulbe externe de la clavicule, surtout à droite. Idem au sternum, au niveau de l'articulation du manubrium et du corps.

Douleur à la pression de la région lombaire, rien à la pression de la colonne.

Il aurait, paraît-il, grandi de 5 à 6 centimètres.

Amaigrissement; peu d'appétit, rien au cœur ni au poumon. État anémique très marqué, bourdonnements, vertiges, pâleur des conjonctives; souffre du ventre, coliques, constipation; langue large et blanche.

Quitte l'hôpital au bout de deux jours.

Ostéo-périostite consécutive au Typhus.

Cheng, 36 ans, marchand de tabac. A eu le typhus il y a deux mois et demi. La maladie fut très grave et dura environ un mois et demi.

Pendant sa convalescence, il éprouva des douleurs aux coudes, aux épaules, aux hanches et au sacrum. Les douleurs étaient sortout marquées le matin, au réveil. Les mouvements de flexion, d'extension, de pronation de l'avant-bras étaient pénibles à droite et à gauche. La douleur était vive au point de l'empêcher de porter la main à sa figure pour se débarbouiller. Il marchait très difficilement et avait la sensation de raideur dans la colonne lombaire.

Il n'avait pas de fièvre et avait assez bon appétit. Il vient à l'hôpital le 15 octobre 1895. Il marche en traînant les pieds, le corps penché en avant, les avant-bras légèrement fléchis.

Il n'accuse pas de douleurs spontanée ou à la pression, aux pieds, aux jambes, aux cuisses, à l'articulation coxo-fémorale. L'exploration régulière du sciatique montre ce nerf indemne. Mais le patient accuse de la douleur au niveau de la crête iliaque, à droite et surtout à gauche.

La pression, même légère, de la portion antérieure de cette crête lui fait pousser des cris. La palpation et la pression de la région lombaire ne produisent pas de douleur. Il en est de même de celle du corps du sacrum. Mais sur les parties latérales de cet os, et au niveau des articulations sacro-iliaques, la pression est un peu douloureuse.

Cet homme souffre très peu quand il est assis. Allongé, et pendant la marche, il souffre et ceci à cause des tiraillements provoqués par les muscles insérés au niveau des points douloureux.

La main, le poignet, l'avant-bras sont indemnes. Les mouvements du coude ne sont pas trop pénibles. La flexion est moins douloureuse que l'extension. Les mouvements de supination sont également douloureux. La pression réveille une douleur très vive, surtout à droite au niveau de l'olécrane, et plus spécialement de sa pointe. Il y a également de la douleur au niveau de l'épicondyle.

Les mouvements de l'épaule sont assez étendus. Le bras droit peut se mouvoir lentement; quant au gauche, il ne peut exécuter le mouvement de se placer la main derrière la tête, à cause de la douleur aiguë qu'il détermine.

La pression sur la tête de l'humérus gauche est douloureuse, surtout au niveau de sa grosse tubérosité. La portion externe de la clavicule gauche est légèrement sensible.

La sensibilité est normale. Pas d'atrophie.

Le malade a peu d'appétit et vomit, paraît-il, de temps à autre.

18.—Il prend 0.50 d'iodure de potassium; et tous les jours la révulsion a été pratiquée avec la teinture d'iode sur les points douloureux. Le résultat en a été de faciliter les mouvements et de faire diminuer un peu la douleur.

Les douleurs de l'épitrochlée et des articulations sacro-iliaques persistent, des pointes de feu légères furent appliquées tous les deux jours. Après une dizaine de jours, le patient se sentit suffisamment soulagé pour demander à quitter l'hôpital.

Le typhus peut laisser d'autres traces de son passage. Au mois de septembre, nous avons vu, à la consultation de l'hôpital du Nan T'ang, un enfant de 11 ans qui, deux mois auparavant, avait eu le typhus. Il en avait gardé un foie volumineux, débordant de trois travers de doigt les fausses côtes; la rate était dure, très volumineuse, pas douloureuse à la pression. Il n'y avait pas d'ictère. Le ventre était météorisé. Pas de traces d'ascite. L'enfant n'avait pas d'appétit, était faible, amaigri et anémié. Nous n'avons malheureusement pu le décider à entrer à l'hôpital. Il y a entre ces lésions viscérales et le typhus une relation très nette.

Pour en finir avec les complications du typhus, nous parlerons de celles qui sont d'origine non infectieuse, mais plus vraisemblablement toxique; et, à cet effet, nous rapporterons le cas suivant d'atrophie musculaire, observé sur une Sœur de Charité.

Atrophie musculaire consécutive au Typhus.

Mdlle. X., Religieuse de l'ordre de Saint-Vincent de Paul, 34 ans; en Chine depuis cinq ans. A eu le typhus assez grave en 1892 (durée 25 à 30 jours).

À la fin de sa convalescence, au moment où elle allait pouvoir reprendre ses occupations, elle s'aperçoit que sa main droite est faible et inhabile. Elle laisse tomber un verre, et surtout

de l'antipyrine ont été identiques; ce médicament restait même, le plus souvent, inefficace contre les céphalalgies. Nous avons également eu recours à l'acide salicylique. Il semble que ce médicament vaille un peu mieux que les autres. Nous ne croyons pas que les effets légèrement antithermiques soient dus à l'action parasiticide de l'acide salicylique, mais plutôt à la sudation assez considérable qu'il peut provoquer.

En présence des résultats insignifiants obtenus par ces médicaments, nous les avons de bonne heure mis de côté. La seule méthode antithermique qui nous parut bonne fut celle des bains, ou plutôt des affusions froides. Le malade était plié dans un drap mouillé, couché sur une toile cirée, puis on l'arrosait avec de l'eau sortant du puits, à 11 ou 12 degrés, jusqu'au moment où il claquait des dents. Il était alors mis dans des couvertures sèches, et la réaction se faisait rapidement. Le patient en éprouvait un bien-être considérable.

Les affusions froides étaient faites dès que la température arrivait aux environs de 40°. Au début, les malades supportent bien ces affusions, mais bientôt, elles leur sont pénibles, et il faut même les cesser chez certains d'entre eux. Chez ceux-là, nous donnions des lavements froids phéniqués, lesquels, en même temps qu'ils assuraient le libre fonctionnement du gros intestin, en faisaient l'antisepsie. Chez certains malades, nous notons quelquefois, après le lavement ou l'affusion, une légère baisse de la température, qui même a pu tomber de huit dixièmes de degré. Dans tous les cas, le patient pouvait, dans les heures qui suivaient, goûter une sorte de bien-être, de repos bienfaisant. Si cette médication n'assure pas d'une façon suffisante l'abaissement de la température, elle a au moins l'avantage de faire fonctionner la peau et surtout le rein. La quantité d'urine, sous cette influence, augmente d'une façon très notable, et partant la quantité des toxines éliminées par cette voie est d'autant plus considérable.

La transpiration abondante peut parfois produire un léger abaissement de la température. Nous avons souvent employé le gingembre en infusion, et suivant la méthode chinoise. La quantité de sueur produite était considérable; mais nous avions généralement moins en vue de faire baisser la température, que de parer momentanément à une sécheresse vraiment extrême de la peau. Après la sudation, elle récupérait la souplesse et les malades s'en trouvaient très bien.

Le malade pendant toute sa maladie peut s'alimenter facilement; c'est là un point important et avantageux. Nous donnions l'alcool sous forme de Porto, champagne, sirop de punch et les patients en supportaient fort bien de grandes quantités. La seule drogue que nous ayons employée était l'extrait mou de quinquina. Quant au régime alimentaire, il consistait dans du lait, du bouillon, des jaunes d'œufs et du jus de viande, en quantité aussi considérable que le sujet pouvait en absorber.

Mais il ne s'agit pas seulement de tonifier l'organisme en général. Il y a certains organes qui ont particulièrement besoin de soins, et au premier rang se trouve le cœur. Nous avons vu plus haut que très vite le cœur était touché par la maladie. Le myocarde est atteint, et il est à craindre que le viscère ne soit trop épuisé. Aussi dès que le pouls petit, dicrote, dépassait 125 ou 130 pulsations par minute, donnions-nous un peu de teinture de digitale. Le pouls restait rapide, mais sa tension était plus forte.

Il ne faut pas un seul instant laisser défaillir le pouls. Dans les cas terminés par la mort, le cœur a brusquement été sidéré par le poison typhique; les phénomènes asystoliques ont été prompts, et il nous a été impossible, même avec des injections de caféine, de faire récupérer

sa force à l'organe. Il était trop tard; le cœur était trop bas pour espérer pouvoir le remonter, même avec les toniques les plus énergiques.

L'antisepsie intestinale, bien que moins nécessaire que dans la fièvre typhoïde, nous paraît bonne. Le calomel et les lavements la réalisent en grande partie. Mais nous croyons utile d'y joindre le salol, ou bien le naphtol et la magnésie calcinée, qui surtout pendant la convalescence préviennent ces fermentations qui se manifestent extérieurement par des gaz d'odeur infecte.

Dès que les malades se sentent assez de force pour se tenir sur leurs jambes, nous leur faisons quitter la chambre, et rester dehors bien couverts, estimant que l'effet du grand air sera beaucoup plus efficace et rapide que celui des médicaments.

L'antisepsie intestinale, par le calomel et les lavements, les antithermiques et les toniques, nous a, croyons-nous, rendu de très grands services dans le traitement du typhus de Pékin, et peut-être est-ce à cette thérapeutique que nous devons d'avoir vu tomber le taux de la mortalité, de 50 à 15 pour cent.

Tels sont les traits rapidement esquissés du typhus auquel peuvent être exposés les Européens habitant le nord de la Chine et la capitale du Céleste Empire. Il a beaucoup d'analogies avec celui qu'on observe en Europe. Mais il s'en distingue par un certain nombre de points sur lesquels nous allons insister en terminant.

L'incubation est fort courte et dans plusieurs cas elle n'a pas dépassé 24 heures. Or, en Europe, cette période est fixée à une douzaine de jours, en moyenne. La période prodromique ne dure guère plus de deux à cinq jours.

La période d'état, en Chine, comme en Europe, est d'une durée sensiblement la même, la température atteint le même degré, et les rémissions y sont nulles.

Mais l'éruption se fait d'une façon très irrégulière par poussées successives; elle dure, en moyenne, une semaine. C'est dire qu'elle disparaît au moment où en Europe elle commence à revêtir le cachet pétéchial. Ici, les taches ont beaucoup plus d'analogies avec celles de la fièvre typhoïde qu'avec celles du typhus d'Occident. Elles ne revêtent pas le caractère ecchymotique, ne forment point de larges placards violacés marbrant la peau; toujours elles disparaissent sous la pression du doigt; et, dans deux cas seulement, dont un cas à rechutes, certaines taches ont présenté à leur centre de petits points en piqûre de puce.

L'éruption n'est pas suivie de desquamation. Quant à la desquamation qu'on peut observer au moment de la convalescence, nous en avons suffisamment parlé plus haut, pour nous dispenser d'y revenir ici.

Un des caractères importants du typhus d'Europe est la constipation opiniâtre. Rien n'est plus facile que d'entretenir à Pékin la liberté du ventre, et de légers purgatifs, comme le calomel, provoquent jusqu'à 20 et 25 selles diarrhéiques dans les 24 heures.

Le typhus de Pékin est bien nettement une maladie à crises. Le malade passe brusquement d'un état grave à une amélioration considérable, et cette transition est toujours indiquée par une chute de la température de 1½ à 2 degrés entre le 12e et le 14e jour. Le degré normal est atteint dans les jours suivants; mais la défervescence se fait par chutes quotidiennes très grandes.

Les malades n'ont pas toujours ce facies hébété avec la figure congestionnée, les yeux injectés et larmoyants qui est si typique dans le typhus d'Occident. La langue se rôtit tard;

malgré la température élevée, les lèvres et les dents ne sont qu'à la longue enduites de fuliginosités. Tandis qu'en Europe on peut souvent juger de la gravité d'une atteinte d'après le facies du patient, ici nous n'avons pu établir aucune corrélation.

Il en est de même pour l'odeur, laquelle est, paraît-il, d'autant plus forte que l'attaque est plus sérieuse. Nous avons du reste déjà dit que l'odeur du typhique, en Chine, n'avait rien de très pathognomonique.

Les malades dorment souvent mal; mais on ne peut faire de l'insomnie un signe important.

Le typhus en Chine ne terrasse pas le malade comme il le fait en Europe; sans doute, au bout de 8 à 10 jours de fièvre, ils sont très prostrés, parfois en stupeur profonde, mais quelques-uns peuvent, cependant, garder assez de forces pour se lever et aller seuls à la selle.

Le typhus a ici une prédilection très marquée pour le cœur. Cet organe est en effet un des premiers atteints, et d'une façon très sérieuse. En revanche, le poumon est à peu près indemne; ou, dans tous les cas, les accidents qu'il peut présenter sont insignifiants.

Le foie semble ne pas être touché par le typhus. Quant à la rate, rarement elle présente une hypertrophie notable. Ce n'est qu'assez tardivement que l'on peut constater son augmentation de volume. Le plus souvent elle n'est pas ou peu sensible à la pression.

L'albuminurie n'a été constatée que 3 fois sur 13 cas que nous avons suivis, soit 23 pour cent. MURCHISON, au contraire, l'a rencontrée chez 70 pour cent des malades.

Les troubles oculaires du typhus de Chine sont intéressants à signaler, surtout quand ils se manifestent sous la forme d'une diminution permanente de l'acuité visuelle.

La chute des cheveux, les douleurs musculaires et articulaires, observées ici seraient plutôt l'apanage de la fièvre typhoïde en Europe.

Enfin, il peut y avoir des rechutes de typhus. Nous en avons constaté une. Le typhus peut également récidiver.

La mort, en Europe, survient, d'après MURCHISON, après le 14e jour. Ici, elle s'est produite plus tôt, aux environs du 10e jour.

Tels sont les caractères qui distinguent le typhus de Pékin et du nord de la Chine de celui de l'Europe.

OBSERVATION I.

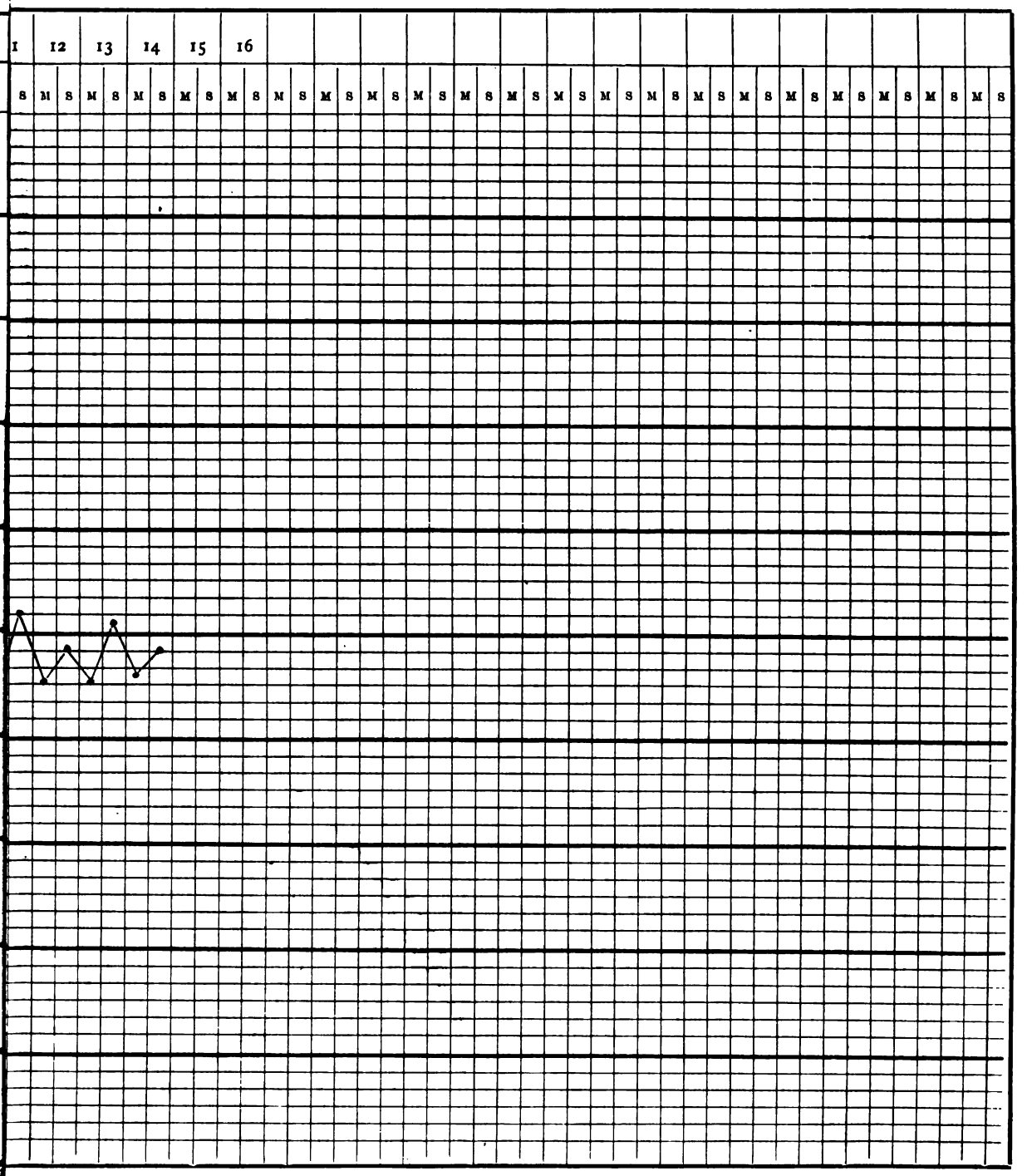
Frère JOSEPH, âgé de 23 ans, né à Étable (Savoie); en Chine depuis 1891, de la Mission de Pékin.

Début vendredi 29 mars par un peu de malaise.

30.—Dans la soirée, tête lourde; céphalalgie gravative; ni courbature, ni fièvre. Légère inappétence. Il dort assez bien; moins bien pourtant que d'habitude.

31.—Au réveil, bouche amère; malaise toute la journée; sensation de fatigue; jambes cassées; toujours mal de tête. Vers 4 heures, frissons; ne claque pas des dents. Il essaie pourtant de faire, de 1 heure à 4 heures, une petite promenade, mais la marche est pénible, tant la courbature est marquée. Il a mangé un peu à midi; le soir, n'absorbe qu'un potage et se couche de bonne heure. La nuit assez bonne.

Pouls.	Temp.	Resp.
150	43°	60
148	42 8	59
146	42 6	58
144	42 4	57
142	42 2	56
140	42	55
138	41 8	54
136	41 6	53
134	41 4	52
132	41 2	51
130	41	50
128	40 8	49
126	40 6	48
124	40 4	47
122	40 2	46
120	40	45
118	39 8	44
116	39 6	43
114	39 4	42
112	39 2	41
110	39	40
108	38 8	39
106	38 6	38
104	38 4	37
102	38 2	36
100	38	35
98	37 8	34
96	37 6	33
94	37 4	32
92	37 2	31
90	37	30
88	36 8	29
86	36 6	28
84	36 4	27
82	36 2	26
80	36	25
78	35 8	24
76	35 6	23
74	35 4	22
72	35 2	21
70	35	20
68	34 8	19
66	34 6	18
64	34 4	17
62	34 2	16
60	34	15
58	33 8	14
56	33 6	13
54	33 4	12
52	33 2	11
50	33	10



Lundi, 1er avril.—Malaise accru; reste au lit. Purgatif (citrate de magnésie), qui fait de l'effet: 10 à 12 selles dans la journée. Le malaise persiste dans la matinée. Se lève vers 11 heures, essaye de manger un peu à midi; pas d'appétit. Se recouche dans l'après-midi, tant le malaise est grand. Vers 4 heures, température 40°; frissons et difficulté à se réchauffer; couvertures, bouillotte; infusion de gingembre amène sudation abondante et un abaissement de température: 38°.2. La nuit fut bonne.

2.—Purgatif, mal de tête très violent; lourdeur et vertige; température 39°.9. Pas de vomissements; pas de nausées. Inappétence absolue; bouillon, lait, en quantité légère; quinine 0.75.

3.—C'est la première fois que je vois le malade. Langue blanche, bouche amère; mal de tête gravatif; vertiges qui nécessitent l'appui de quelqu'un quand il se lève pour aller à la selle. Pas de bourdonnements d'oreilles. Courbature générale, surtout lombaire et dans les membres inférieurs. Le moindre mouvement imprimé au lit est douloureux et le fait crier. Les articulations ne sont pas gonflées. Température 39°.7. Les yeux sont rouges, larmoyants; photophobie légère. Très enchifrené, quelques fuliginosités sur les lèvres, mucosités rougeâtres quand il se mouche. Auscultation et percussion de poitrine, négatives.

Cœur: négatif. Pouls fort et rapide: 110.

Prend 0.75 antipyrine et 0.50 quinine. L'antipyrine calme un peu le mal de tête. L'effet de la quinine est nul. Température 39°.9. Dans l'après-midi, une éruption commence à se montrer, d'abord sur les parties découvertes: mains, avant-bras, puis bras et poitrine. La nuit est mauvaise, très agitée; il ne dort pas. Pas de délire; toute la nuit la température se maintient à 39°.8, 39°.9.

4.—Purgatif léger tous les matins. Ce matin, il est assez calme. Les selles sont jaune-brun, liquides, très peu de matière. Depuis le début, 10 à 12 selles par jour, et autant la nuit. Abattement assez fort, il est surtout marqué pendant l'acmé fébrile. Dès que la température tombe un peu, vers le matin, le malade se plaint, accuse lourdeur de tête, courbature douloureuse; les jambes sont brisées; légère épistaxis. Pas de vomissements.

Dans l'après-midi, la fièvre atteignant 40°, le malade est plié dans un drap mouillé et épongé avec de l'eau à 16 degrés. La lotion n'est pas faite sur les pieds. La réaction commence dès que le malade est placé dans une couverture, et il se plaint de froid aux pieds. Dans la soirée, deux nouvelles séances de réfrigération; cette fois-ci, les pieds eux aussi sont lotionnés et le malade n'y accuse plus de froid. L'effet de l'eau froide est d'abaisser momentanément la température de $\frac{8}{10}$ à 1°. Le malade éprouve du bien-être; la quantité d'urine augmente et il pisse beaucoup dès que la réaction est faite.

Nuit agitée; un peu de bouillon et lait; ni quinine, ni antipyrine.

5.—Langue pas très blanche, un peu tremblotante; l'œil est légèrement injecté; un peu de photophobie; pouls bien marqué, mais rapide: 124. Légers soubresauts tendineux. La peau est très chaude et sèche. La figure très rouge, et la congestion est surtout marquée sur la pommette droite. Température 40°. Intelligence lucide, répond bien aux questions qu'on lui pose. Un peu d'angine et légère dysphagie; la gorge est rouge, luisante, la luette est œdématiée.

Se plaint de point douloureux et de constriction légère sur la région cardiaque, et de point de côté à droite, se plaint de douleurs articulaires et dans les mollets.

Une éruption très confluente couvre la poitrine, le ventre, les membres inférieurs et supérieurs, le dos et les mains; ne dépasse pas la clavicule. Très confluente sur la région dorsale du bras et avant-bras; le dos de la main; quelques taches dans la paume de la main. Cette éruption ne provoque pas de démangeaison et est survenue sans abaisser la température. Elle s'est faite en trois jours.

Ce sont des macules rouges, disparaissant sous la pression du doigt. Leur teinte est rose, un peu rouge, et rappelle la couleur de celle de la rougeole. Leur dimension varie d'une tête d'épingle à une petite lentille. Leur forme est irrégulière; la grande majorité est ronde ou ovalaire; quelques-unes sont comme dentelées, un peu en croissant; autour de la macule une petite zône rosée. Dans certains points, ces macules sont très confluentes (bras et avant-bras), elles se fusionnent, leur teinte paraît plus rouge et rappelle le rash rubéolique.

Celles qui occupent la paume de la main, au nombre de 8 à 15 par main, sont régulières, rosées comme les taches de la typhoïde et de la dimension d'une petite lentille.

Aux jambes et aux cuisses, elles sont moins abondantes, visibles surtout à la partie interne des cuisses.

Dans le dos, elles sont assez abondantes, surtout au niveau des omoplates.

Examen des organes: le cœur bat fort, les bruits sont bien marqués. Poumon: percussion: légère submatité en bas et en arrière, surtout à droite; six ventouses sèches; quelques crachats blancs et un peu gommeux. Abdomen: palpation non douloureuse; pas de gargouillement dans les fosses iliaques.

La pression de la rate n'est pas douloureuse; l'organe non augmenté de volume.

Le foie ne déborde pas les fausses côtes.

Les articulations ne sont ni rouges ni gonflées.

Très difficile de savoir la quantité d'urine rendue; le malade urine chaque fois qu'il va à selle; l'urine laisse déposer une très grande quantité de sels uratiques.

Un peu d'albumine, 0.40 à 0.50 par litre. Température 40°.1. Quatre lotions dans la journée et la nuit.

6.—Matinée assez calme; de 3 à 4 heures du soir, un peu d'agitation; à 4 heures, température 39°.8. La première réfrigération a été faite à 1 heure après-midi: peu d'effet; deuxième, à 4½ heures. Le calme revient; chute du thermomètre $\frac{8}{10}$° pendant une heure et demie et deux heures. Le malade repose alors et se sent bien; sept à huit selles dans la journée, odeur très fétide; sept à huit selles pendant la nuit, très peu abondantes chaque fois; pas de douleur; faiblesse et vertiges du malade, l'obligeant à être soutenu par un ou deux aides quand il se lève; se plaint toujours de la tête et fatigue générale.

Deux bains pendant la nuit; agitation, léger délire, sommeil pénible. Température de la nuit prise toutes les deux heures: 39°.5. Un peu de dyspnée pharyngée.

7.—Prostration très marquée, ce matin. Céphalalgie toujours très vive, délire léger. L'éruption est très confluente, surtout aux parties découvertes. La poitrine a une teinte généralement rosée où les macules font un piqueté plus foncé. Sur l'avant-bras, bras et dos de la main, les macules fusionnées forment de larges placards rouge foncé, presque le rash

scarlatiniforme, qui provoquent une démangeaison que calment les lotions froides. L'éruption de la paume de la main est très apparente; paume mouchetée. L'éruption disparaît momentanément sous la pression du doigt, mais les macules se sont acuminées; aspect papuleux. Injection conjonctivale et photophobie. La figure est rouge, congestionnée, les pommettes brûlantes; les oreilles sont froides; pas de fuliginosités sur les lèvres; légères vésicules d'herpès; température 39°.6.

Légère épistaxis. Pouls rapide et faible: 136. Cœur fœtal, mais bruits assez nets; soubresauts tendineux et petites contractions fibrillaires des muscles. Spasme musculaire des jambes et des mains. Respiration gênée et rapide: 32. Poitrine: légère matité; en arrière râles de congestion pulmonaire; quatre ventouses sèches à droite. Gorge rouge; luette œdématiée.

Palpation de l'abdomen non douloureuse; pas de gargouillement; foie et rate normaux.

Un peu d'albumine.

Les selles sont liquides, ou plutôt semi-liquides, fétides, brun foncé, rappelant, comme couleur et consistance, une crême au chocolat épaisse. Soirée pénible, agitée. Température 39°.8. À 4 heures, bain suivi de calme; abaissement de $\frac{9}{10}$°. À 11 heures, nouveau bain: peu de résultat; à 2 heures, un autre: bon effet; le reste de la nuit est très calme, mais la température, momentanément abaissée, remonte à 39°.4.

Alimentation: bouillon, lait, vin de Porto.

8.—Purgatif à 7 heures du matin (limonade Rogé). Journée calme; somnolence; température 39°.4; plusieurs selles dans la journée, une seule dans la nuit. Comme il n'était que peu allé dans la nuit, nouveau purgatif léger à 4 heures du matin.

Toute la nuit délire; rêve à haute voix, pendant sa somnolence de la journée. Il se figure que deux à trois personnes sont avec lui dans son lit. Il voit une foule de personnes autour de son lit. Très affaibli; pas de lotion aujourd'hui.

9.—Abattement, somnolence, soubresauts tendineux et contractions musculaires. Quand nous l'examinons à 10 heures: langue blanche et chargée; bouche un peu amère. Vésicules d'herpès sur les lèvres; pas de fuliginosités; figure peu congestionnée; urines riches; oreilles froides; photophobie. Légère obnubilation des idées. Torpeur intellectuelle dont on le fait sortir assez bien, en parlant d'un ton impératif.

Éruption cutanée beaucoup moins marquée. La coloration rouge vif a diminué. Les taches sont encore bien marquées au ventre où elles ont l'aspect papuleux. Ne disparaissent pas complétement sous la pression du doigt. L'aréole rosée qui entourait la macule au début de l'éruption a disparu. Aux bras, avant-bras et dos de la main l'éruption confluente à aspect rashiforme a disparu. Il ne reste plus que de petites papules. Les taches qui siégeaient dans la paume de la main ont disparu. Aux cuisses et aux jambes, l'éruption a presque totalement disparu. Le pouls est faible, rapide: 140; léger dicrotisme.

Cœur fœtal: premier bruit sourd, deuxième plus éclatant, surtout à l'artère pulmonaire.

Abdomen: pas de douleur à la pression, pas de gargouillement; une selle, dans la matinée, moins noire qu'hier; marron.

La rate non douloureuse est légèrement augmentée de volume.

Poitrine: matité en arrière, surtout à droite; congestion des deux bases, droite surtout, et plus marquée qu'avant-hier. Infusion de digitale. Gorge rouge; un peu de gêne respiratoire.

Légère épistaxis.

Le malade reste depuis cinq jours découvert, ou couvert seulement du simple drap. Les autres malades font de même, alors qu'au début, même avec 40°, ils grelottaient la fièvre et demandaient couvertures et bouillotte.

10.—Somnolent; pousse des cris inarticulés toute la journée; sorte de gémissements; s'agite dans son lit, se découvre, soubresauts tendineux et contractions musculaires. Pas de vomissements; un peu de sang quand il se mouche.

Selles régulières: six à sept dans la journée et autant dans la nuit, sont jaunes, liquides et sentent moins mauvais. A fait sous lui deux fois dans la nuit.

Le malade est très abattu; il a un peu de dyspnée; très altéré.

11.—Il a dû délire dès le matin; ce délire va augmentant jusqu'à 2 heures après-midi.

Il s'agite beaucoup, se découvre, chante, prononce des paroles sans suite. L'éruption qui depuis hier a commencé à disparaître est très peu marquée maintenant.

Vers 2 heures, il s'est tout à coup senti plus faible et a eu le sentiment de mort imminente. Cet état de défaillance a duré jusqu'à 4 heures, puis il s'est senti mieux. Le délire a fait place à des idées nettes; il a reconnu les personnes qui l'entouraient et a pu s'entretenir avec elles. Il est resté de 2 à 4 heures claquant des dents, sans bouger, les extrémités froides, le pouls imperceptible.

Après 4 heures, il a commencé à reposer. À 5 heures la fièvre est tombée à 38°, mais est remontée dans la soirée; il eut à ce moment-là encore un peu de délire. La nuit fut calme, la respiration régulière, et il prit toutes les deux heures: lait, bouillon, soupe, vin.

12.—Quand je vois le malade à 9½ heures du matin, il est très abattu, somnolent et il faut parler un peu fort pour le tirer de sa torpeur. Les premières réponses manquent un peu de précision; mais bientôt il nous donne des réponses nettes. La respiration est calme; le pouls petit et filiforme: 120; la langue est très sèche, mais pas rôtie, tremblotante. La température est tombée: 38°.5. Il se sent très affaibli, ne souffre pas, et éprouve un besoin intense de sommeil. Les narines contiennent un peu de sang. Le malade a eu une légère épistaxis.

Pas de fuliginosités sur les lèvres. L'injection oculaire a disparu presque complétement; plus de photophobie.

La figure est fatiguée; les traits tirés; congestion de la pommette droite. Oreilles froides. Les gencives sont gonflées et un peu douloureuses. Les pupilles sont très dilatées; un peu de dyspnée. La gorge est douloureuse, sèche. Malade très altéré.

La peau est chaude et sèche. L'éruption a presque totalement disparu sur les parties exposées à l'air: poitrine, mains, avant-bras et bras. Il ne reste plus qu'un petit pointillé rose pâle, ça et là quelques taches rosées encore bien nettes.

Palpation abdominale non douloureuse; pas de gargouillement.

Foie normal; rate augmentée de volume et un tout petit peu sensible à la pression.

Poitrine: légère submatité en bas, à droite et en arrière; quelques râles de congestion.

Le cœur est très rapide; les bruits sont sourds, sauf le deuxième bruit à l'artère pulmonaire qui est toujours éclatant. Dédoublement du deuxième bruit assez intermittent.

Prescription: lait, bouillon, vin de Porto, potion à l'extrait de quinquina. Lavement phéniqué (eau 200 gr., acide phénique 0.15); acide salicylique 1 gramme, en deux cachets; 0.50 de poudre de digitale en infusion.

Calme dans l'après-midi; la congestion de la face disparaît.

Légère transpiration; vers 9 heures du soir, le thermomètre remonte à 39°; un peu d'agitation; trois à quatre selles dans la nuit; elles ont un peu de consistance et sentent moins mauvais que les jours précédents.

13.—Ce matin il se sent très faible, besoin intense de sommeil, la figure est pâle, les traits tirés, les yeux excavés.

La peau est chaude, mais un peu moite. Température 38°.6.

La langue est sèche, un peu rôtie dans sa partie médiane; les bords sont humides et souples.

Le pouls est plus calme et assez fort: 120. Plus de soubresauts tendineux.

L'éruption a presque complétement disparu, si ce n'est dans le dos où se voient encore quelques taches rosées.

La palpation abdominale n'est pas douloureuse; pas de gargouillement; la rate est augmentée de volume: D.T., 12; D.V., 7½.

Un peu de congestion pulmonaire, à droite et en arrière.

Les bruits du cœur sont plus distincts; le cœur n'a plus le caractère fœtal. Urine claire, pas d'albumine; les jours précédents, grande quantité de dépôts uratiques.

Appétit assez vif. Digitale 0.50; acide salicylique 1 gr.; deux lavements phéniqués; lait et jaunes d'œufs, bouillon, vin de Porto.

14.—Très calme, dort nuit et jour; il faut le réveiller pour lui faire prendre quelque chose.

Dans l'après-midi, on essaye de lui faire manger un petit biscuit trempé dans le vin; presque aussitôt, il s'est mis à transpirer d'une façon énorme, les couvertures sont presque traversées; ainsi, jusqu'à 3 heures du matin; cette sueur abondante le rend très faible.

15.—Abattu, figure tirée; langue un peu sèche et noire (dort la bouche ouverte, les narines sont obstruées); la peau est moite et le cou couvert de sudamina.

Pouls 88; bruit de la base très dédoublé. Légère bronchite à droite; expectoration blanche et aérée.

La dilatation pupillaire a cessé.

Il peut aller seul à la selle, se sent faible, mais n'a plus de vertige. Les selles sont moins nombreuses (six à huit pendant 24 heures), jaunes et un peu moulées.

16.—Dans l'après-midi et dans la nuit a beaucoup transpiré, au point qu'il faut changer la literie. Il ne souffre pas, se sent faible et de l'appétit. Il a beaucoup mieux sa tête; le besoin de sommeil a diminué; il peut recevoir des visites et causer; la température descend, elle est au-dessous de la normale.

17.—Se sent faible. Pouls 100; le cœur est bon, plus de bruit de galop. La langue est humide et blanche. La bronchite a presque complétement disparu; légère expectoration blanchâtre; les selles sont plus rares, deux à trois par 24 heures et moulées.

Transpire encore beaucoup dans l'après-midi; ces sueurs ont un caractère particulier; elles sont fétides, cadavériques.

18.—Dans l'après-midi, il se lève pendant un quart d'heure. Le pouls est petit, régulier: 84.

Persistance du bruit de galop de l'artère pulmonaire; grand appétit. Température 36°.5.

19.—Il se lève pendant une heure, marche et sort un peu devant la porte. Se sent très faible, a très bon appétit.

20 à 23.—Il ne souffre point, mais se sent faible. Il se lève une heure par jour, mais se recouche très fatigué. Température reste basse: 36°.6. La quantité d'urine a notablement augmenté depuis trois jours; environ 2 litres par 24 heures.

Le dédoublement du deuxième bruit est intermittent et peu marqué quand il existe.

A fort appétit.

24 à 28.—Même état, mais plus fort; appétit toujours considérable. Commence à manger un peu de blanc de volaille et du pain; légère ascension du thermomètre depuis ce moment.

28.—Va de mieux en mieux; sort, marche; un peu de fatigue; reste debout toute la journée; très bon appétit; somme toute, guéri.

30.—Sort dans la cour, se promène sans fatigue. Encore un peu pâle; mange très bien et sent ses forces revenir.

Du 1er au 7 mai.—Depuis son entrée en convalescence, il éprouve tous les matins des coliques sèches, suivies et calmées par l'émission de gaz très fétides. La journée et très bonne.

L'ouïe, un peu dure à l'entrée en convalescence, est maintenant normale.

La vue est trouble, moins pourtant qu'au début de la convalescence. Il a comme un brouillard devant les yeux. Le cœur, tant que le malade est couché, le matin, au réveil par exemple, est calme: 70 à 80. Dès qu'il se lève, il s'accélère 115 et après le repas ou un effort, 125 à 130. Douleur à la région précordiale. Il sent battre son cœur.

Le cœur est normal, mais le premier bruit est très éclatant: 10 centigrammes de caféine par jour.

Observation II.

Frère Victorius, né à Yssingeaux (Haute-Loire), âgé de 20 ans; en Chine depuis 1893, de la Mission de Cha-la-eul.

Début, 1er avril 1895. Après 4 heures, il éprouve de la faiblesse dans les jambes et un malaise général; courbature, comme s'il avait beaucoup marché; nuit bonne.

2.—Bouche pâteuse, langue blanche. Dans l'après-midi, mal de tête; la faiblesse et la courbature augmentent; inappétence. Dans la soirée, mal de tête très violent, surtout frontal. Nuit pas très bonne, agitée.

3.—Au lever, purgatif salin qui fait de l'effet et amène soulagement momentané. Mal de tête et fièvre dans l'après-midi: 38°.9. Nausées; bouche pâteuse. Les jambes étaient un peu cassées, mais pas de douleur dans les reins et bras. Nuit mauvaise.

4.—Purgatif salin. Se plaint de point de côté à droite. Fièvre dans l'après-midi: 40°, 1 à 4 heures. La fièvre atteint son maximum à 9 heures et à 4 heures. Mal de tête très vif. Garde le lit depuis hier soir. Point de côté se calme dans la soirée. La vue est un peu trouble, légère photophobie; un peu de vertige quand il s'assied sur son lit. Nuit agitée et mal de tête violent.

Pouls.	Temp.	Resp.
150	43°	60
148	42 8	59
146	42 6	58
144	42 4	57
142	42 2	56
140	42	55
138	41 8	54
136	41 6	53
134	41 4	52
132	41 2	51
130	41	50
128	40 8	49
126	40 6	48
124	40 4	47
122	40 2	46
120	40	45
118	39 8	44
116	39 6	43
114	39 4	42
112	39 2	41
110	39	40
108	38 8	39
106	38 6	38
104	38 4	37
102	38 2	36
100	38	35
98	37 8	34
96	37 6	33
94	37 4	32
92	37 2	31
90	37	30
88	36 8	29
86	36 6	28
84	36 4	27
82	36 2	26
80	36	25
78	35 8	24
76	35 6	23
74	35 4	22
72	35 2	21
70	35	20
68	34 8	19
66	34 6	18
64	34 4	17
62	34 2	16
60	34	15
58	33 8	14
56	33 6	13
54	33 4	12
52	33 2	11
50	33	10

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5.—Quand je le vois, à 10½ heures du matin, la langue est blanche, pas tremblotante; la peau est chaude, un peu moite; la figure est rouge, les pommettes un peu congestionnées; quelques fuligmosités; œil un peu injecté, larmoyant; légère photophobie. Le pouls est fort, bien frappé, un peu rapide: 100. Dans la fosse iliaque droite, on note deux taches rosées; pas d'autre trace d'éruption.

Palpation abdominale, pas de douleur à la pression; pas de gargouillement. La rate et le foie ne sont ni douloureux à la pression, ni augmentés de volume.

Auscultation du cœur: temps bien frappés.

Poitrine: sonorité normale, quelques sibilances.

L'état général est bon; le malade se plaint surtout de céphalalgie; légère photophobie. Inappétence. Les aliments paraissent tous fades. Le malade prend du lait, bouillon, vin de Porto.

6.—Journée très pénible; nausées et vomissements. Bain à 1 heure. Peu de soulagement. Thermomètre reste élevé et oscille entre 39°.9 et 40°. À 4 heures nouveau bain qui produit calme. Nuit assez bonne; température dans la nuit oscille entre 39°.7 et 39°.8.

L'éruption commence à paraître, très discrète: poitrine, bras, avant-bras, ventre, mains.

Le malade n'est pas très abattu. Peut se lever seul pour aller à selle. Épistaxis assez abondante dans la soirée; une autre dans la nuit.

7.—Céphalalgie intense, surtout frontale, gravative, à exacerbations. Nausées; pas de vomissements.

Langue blanche, lèvres non fuligineuses, herpès (quelques vésicules). Conjonctive très injectée; photophobie intense. Par moment, bourdonnements d'oreilles. Pouls bien frappé: 120. Quelques soubresauts tendineux. Respiration assez calme: 28. Bruits du cœur nettement frappés; deuxième bruit à l'orifice pulmonaire est particulièrement éclatant. Se plaint, dans la matinée, d'un léger point de côté, dans la région précordiale, qui dure deux heures à peu près.

Poumon: percussion normale, un peu de diminution de sonorité à la base droite. Congestion pulmonaire légère, en bas et en arrière, surtout à droite. Crachats un peu gommeux, mais très rares.

Abdomen: palpation non douloureuse; gargouillement à gauche; foie normal; rate non douloureuse à la pression, semble un peu augmentée de volume. Légère épistaxis dans la matinée.

État général assez satisfaisant; le malade se plaint de la gorge; dysphagie et légère dyspnée; la gorge est rouge, luisante; la luette œdématiée, les amygdales un peu gonflées.

Éruption, encore discrète, est constatée sur le tronc, le ventre, un peu sur les cuisses, les bras, avant-bras, dos de la main. Les taches sont rose pâle, de la dimension d'une petite lentille; ce sont des macules qui disparaissent sous la pression du doigt. Elles disparaissent pendant une heure à une heure et demie, à la suite de la réfrigération. L'éruption du tronc s'arrête à la naissance du cou. Dans la paume de la main les taches rosées sont assez abondantes, très régulières et plus colorées que celles des autres parties du corps. Elles ne provoquent pas de démangeaison et leur éruption n'amène aucune modification dans la courbe thermique.

Les selles sont nombreuses: 8 à 10 dans la journée, et autant pendant la nuit; elles sont peu abondantes, liquides, jaune foncé et très fétides. Régime: lait, bouillon, vin de Porto, 0.75

de quinine; quatre affusions froides dans les 24 heures. Le malade est couché sur une table recouverte d'une toile cirée, et plié dans un linge mouillé. Puis de l'eau, avec une éponge, est répandue sur le drap pendant 10 à 12 minutes, jusqu'à claquement de dents, et que le malade dise lui-même "assez!"

L'eau est employée au sortir du puits à 13°; plus elle est froide, et plus elle est appréciée du malade.

Les idées sont nettes et le malade répond avec précision aux questions que nous lui posons.

À 4 heures, température 40°, bain suivi de calme. Nuit bonne; température 38°.9. Selles fréquentes, mais peu abondantes. Prescription: calomel 0.60 et quinine 0.75; vin, lait, bouillon.

8.—À 7 heures du matin, température 40°; abattu, somnolent toute la journée; il rêvasse à demi-voix. Il lui semble qu'il y a beaucoup de monde autour de lui et que deux à trois personnes sont avec lui dans son lit.

Une seule affusion dans la soirée. Les lotions, qu'il réclamait autrefois, lui provoquent maintenant une certaine appréhension. Pendant le bain, il se raidit, les jambes se contractent, la cambrure rénale s'accentue.

Toute la nuit, température 40°; pas de bain pendant la nuit. Selles nombreuses et assez abondantes, non douloureuses. Il reste calme, malgré la fièvre. Alimentation: potages au lait toutes les deux heures.

9.—Se trouve affaibli ce matin, mais a toutes ses idées. Épistaxis abondante débute à 7½ heures et dure une heure environ. Il perd à peu près 200 gr. de sang. Cette épistaxis l'affaiblit peu; résultat: baisse de température qui de 40° tombe à 38°.6. Langue bonne, lèvres non fuligineuses, pas d'herpès; figure peu congestionnée, chaude, oreilles froides.

L'éruption a envahi le cou et gagné la face, où elle est très visible sur le front; les macules se sont fusionnées par places et font des placards rouge vif, qui forment un relief plus sensible à l'œil qu'au doigt.

Éruption bien marquée, surtout: poitrine, abdomen, cou, omoplate; peu sur les bras, avant-bras, cuisses et jambes.

Ce sont maintenant des maculo-papules, de la grosseur d'un grain de chènevis à une petite lentille, rose tendre, disparaissant, mais non complétement, sous la pression du doigt. Pas de démangeaison.

L'œil est très injecté, mais la photophobie moins prononcée.

Pouls plein, bien frappé: 120.

Cœur: premier bruit peu frappé; deuxième bruit dédoublé, d'une façon intermittente, éclatant surtout à la pulmonaire.

Poumon: submatité et congestion, surtout à droite et en arrière.

Crache un peu.

Abdomen: palpation légèrement douloureuse dans la fosse iliaque droite; pas de gargouillement; exploration inutile des ganglions mésentériques. Rate légèrement douloureuse à la pression. Percussion montre qu'elle est augmentée de volume: D.T., 14; D.V. sur la ligne axillaire, 8½. Foie non augmenté de volume.

Selles très abondantes et liquides; à peu près une toutes les heures et demie; moins fétides depuis qu'il prend 0.60 de calomel. Lait, bouillon, vin; pas de quinine.

10.—Plus abattu, il se sent faiblir; pas de délire; pas d'épistaxis; pas de vomissements; quelques nausées seulement. Peut encore aller à selle tout seul, 10 à 12 fois par jour et autant pendant la nuit. Elles sont jaune-clair et sentent très mauvais; peu abondantes, pas douloureuses. Température 40°.1. L'haleine est mauvaise et la respiration un peu gênée. Se plaint toujours de mal de tête.

La teinte de l'éruption est plus foncée. La température reste élevée toute la journée et toute la nuit et oscille de $\frac{4}{10}$ à $\frac{6}{10}$ de degré, surtout après les selles. Le malade reste assis sur la chaise et se refroidit; il éprouve du bien-être en se remettant au lit.

Les bains n'ont pas été repris. La quinine, 0.75, ne produit aucun abaissement de la température: 40°.1.

L'alimentation est toujours possible: lait, potage, vin de Porto.

11.—L'état de faiblesse s'accentue; le malade ne peut plus seul aller à selle; il doit être soutenu pour gagner la chaise; il n'a pas de délire dans la matinée et répond encore aux questions; il reste assoupi dans un demi-sommeil. Nausées dès qu'il absorbe quelque chose. Le lait seul est bien supporté. Pas de vomissements.

Les selles sont fréquentes et surtout très fétides.

La température oscille autour de 40°. La quinine ne produit aucun effet. Pas de bain.

Délire dans l'après-midi; il parle fort et a toujours la même idée fixe: s'en aller, car ici il n'est pas chez lui. Température 40°.5.

La figure est très congestionnée. Un peu de dyspnée. Les phénomènes s'amendent, la nuit, et il peut reposer un peu.

12.—Assez calme, ce matin. Il répond bien aux questions qu'on lui pose. Il se plaint de lourdeur de tête et surtout de douleur de gorge avec dyspnée et dysphagie. Œil rouge et larmoyant; pas de photophobie. La peau est brûlante et sèche. Température 39°.7. L'éruption a disparu à la face, au cou, aux mains et avant-bras, ainsi que dans la portion de la poitrine correspondant à l'ouverture de la chemise. Dans le dos, à l'épaule, les taches rosées ont l'aspect de petites papules, à contours très nets, disparaissant sous la pression du doigt.

Sur les parties déclives du thorax et de l'abdomen, elles sont rouge vif, quasi-ecchymotiques. On dirait du prurigo avivé; il n'y a pas de démangeaison. La langue est sèche, tremblotante, mais pas rôtie.

La gorge est rouge, les amygdales gonflées, quelques fuliginosités sur les lèvres. Le malade est très altéré.

Le pouls est rapide: 144, assez bien frappé. La respiration rapide: 48 inspirations par minute.

La palpation abdominale n'est pas douloureuse; pas de gargouillement; le ventre est très dépressible; recherche inutile des ganglions mésentériques. L'exploration du foie ne révèle rien; l'organe ne dépasse point les fausses côtes. La rate est augmentée de volume, surtout dans le sens de la hauteur: D.V., 12; D.T., 14.

La percussion du poumon donne une submatité sur toute la hauteur, à droite, et sur la base gauche. Râles et sibilances de congestion pulmonaire. Pas d'expectoration.

Le cœur est affolé, fœtal. Claquement très marqué de l'artère pulmonaire.

Prescriptions: deux lavements phéniqués (eau 200 gr., acide phénique 0.15); une affusion froide dans l'après-midi; 1 gramme d'acide salicylique en deux paquets et 0.75 infusion de poudre de feuilles de digitale. Lait, bouillon, vin de Porto.

L'après-midi, la respiration a été gênée; il n'a pas reposé, constamment agité et souffrant de la gorge. La nuit a également été très mauvaise.

13.—Ce matin, il est très fatigué, il souffre surtout de la gorge; la bouche est sèche, brûlante. Respiration courte et gênée: 48 inspirations. La peau est chaude, pas trop sèche. Le pouls rapide: 140, mais plus fort qu'hier.

Les yeux sont très injectés, un peu de photophobie.

Lèvres et dents fuligineuses, langue rôtie et tremblotante.

L'éruption a presque totalement disparu sur les parties découvertes, où il faut soigneusement chercher pour la voir; elle se montre encore dans le dos, les reins, fesses, cuisses, parties déclives du tronc. Le cœur bat violemment; bruits sourds, surtout le premier bruit; celui de l'artère pulmonaire s'entend très bien. Dédoublement du deuxième bruit intermittent.

La gorge est rouge, sèche, luisante; amygdales non hypertrophiées. La congestion pulmonaire a diminué sous l'influence de la digitale. Palpation abdominale ne révèle rien.

S'alimente difficilement, ne prend bien que du lait; tout provoque des nausées. Deux lavements phéniqués; acide salicylique; 0.75 de digitale; lait et jaune d'œuf.

14.—Toute la journée, la fièvre reste élevée; très agité; la nuit dernière a été mauvaise. Léger délire, moins marqué que les jours précédents. La faiblesse augmente; les selles sont très abondantes, sentent moins mauvais, un peu consistantes. Il ne boit que lait et bière; le bouillon et le vin lui donnent des nausées.

15.—Je vois le malade à 9½ heures. Il est abattu; a de la dyspnée (44 inspirations). L'œil est rouge et larmoyant; l'air anxieux; légère surdité qui l'empêche de bien répondre aux questions. Se plaint de la tête et de la gorge qui est brûlante; la peau est chaude, pas trop sèche. Le pouls est rapide, mais assez plein: 140. L'éruption ne se manifeste sur la poitrine que par quelques taches; à la base du dos, aux fesses, petites pétéchies, rouge violacé, de la grosseur d'une tête d'épingle dont la couleur ne disparaît qu'en partie sous la pression du doigt.

Légère épistaxis dans la matinée.

La gorge est rouge, mais moins sèche que les jours précédents et le malade accuse un peu de mieux de ce côté.

Le cœur n'a plus le caractère fœtal; il est précipité, mais assez fort: effet de la digitale.

La congestion pulmonaire a complétement disparu.

Palpation abdominale ne révèle rien. Rate: même état. Selles nombreuses: 10 à 12; peu abondantes, légèrement consistantes.

L'urine, très chargée ces jours derniers, est plus claire. Un peu d'albumine. Toute l'après-midi, la température reste élevée; un bain à 4 heures amène légère rémission et soulagement. Nuit pénible. Température: matin, 39°.8; soir, 40°.2.

16.—Journée assez bonne; a mieux reposé. Dans l'après-midi, la fièvre a baissé de 1°, mais pour reprendre la nuit. La transpiration abondante commence à se faire: odeur fétide. Pendant la nuit, il se sent très faible, sur le point de défaillir.

17.—Rémission matinale assez nette. Le mal de tête a cessé. Le pouls est plein: 126. La langue un peu humide; beaucoup de fuliginosités sur les dents et les lèvres. La dyspnée est moins marquée: 40 inspirations. L'état de la gorge est meilleur; a expulsé hier, dans la soirée, des membranes ou pseudo-membranes grisâtres, que l'examen de la gorge n'avait pas indiquées; mucosités desséchées.

Les selles sont moins nombreuses, moulées, peu fétides.

Bien que très faible, le malade se sent mieux.

Suppression de la digitale.

18.—La fièvre descend à 38°. Il reste toujours très abattu, somnolent, sub-délire, voit des gens autour de lui, parle, s'agite, carphologie. Les selles sont plus consistantes; pas de vomissements, pas de nausées. La gêne de la gorge est moins accentuée; mais souvent il a des accès de toux qui provoquent une légère suffocation et empêchent la respiration de reprendre tout de suite.

Il prend volontiers du lait, bouillon, vin.

La nuit il a été très faible, plusieurs défaillances.

19.—Ce matin, il est encore très abattu, somnolent. Dyspnée: 40. Les paupières et surtout l'angle interne de l'œil sont recouverts de muco-pus desséché, résultat de la conjonctivite. Carphologie, impatiences, s'agite. Il répond à nos questions et la surdité est moins marquée. Le pouls est fort, plein: 104. La peau est chaude et moite: 38°.5. Les pupilles sont punctiformes. Il souffre un peu de la tête, mais se sent mieux.

Les bruits du cœur sont très forts et le claquement de la pulmonaire n'a jamais été aussi éclatant; il est quasi-métallique.

Congestion pulmonaire, surtout à droite et en arrière.

Malgré sa faiblesse, il a pu ce matin essayer de se lever seul pour aller à selle: trois ou quatre selles par jour, semi-liquides.

Il demande à prendre lait, bouillon, vin.

Après-midi, calme: chute du thermomètre à 37°.6; mais la nuit est très mauvaise, état syncopal et défaillance; respiration très irrégulière, avec suppression de l'inspiration, pendant de longs moments.

20.—Quand je le vois, à 10 heures, il est somnolent, très abattu, traits tirés; figure pâle, terreuse; paupières collées par muco-pus. Langue humide sur les bords. Peu de fuliginosités sur les lèvres. Dans la matinée, à la suite de violents efforts de toux, a expulsé des quantités de mucosités, à l'aspect de pseudo-membranes, venant de la gorge, larynx et trachée. Aussitôt la respiration a été plus aisée: 40. Le pouls est bon et encore rapide: 116. Température 38°. La congestion pulmonaire a beaucoup diminué.

22.—Transpire beaucoup depuis deux jours: sueurs fétides et très abondantes cédant sous l'action du café noir; trois à quatre selles par jour. Urine abondante: 2 litres. N'a pas la force suffisante pour se lever et aller seul à la selle. Tousse beaucoup et les quintes surviennent à l'occasion d'efforts pour aller à selle, s'asseoir sur son lit. Nuit assez calme. Respiration irrégulière.

23.—La figure est maigre, les traits calmes. Langue encore sèche et quand il la tire des mucosités blanchâtres, épaisses et filantes sortent avec elle et adhèrent à la voûte palatine et au dos de la langue.

Pouls 120. Peau légèrement moite. Le cœur est assez fort. Plus de galop; souffle léger à la base, au premier bruit pulmonaire; deuxième bruit très éclatant. Bronchite dans tout le poumon droit. Encore incapable de se lever seul. Très peu d'appétit.

25.—Reste abattu. Toux sèche. La température monte tous les soirs vers 10 heures, et ensuite, se produisent des sueurs moins fétides que ces jours derniers. A un peu faim. La diarrhée a cessé; les selles sont molles, jaunes. Il ne se plaint de rien, si ce n'est de son extrême faiblesse.

26.—Pouls 104, petit. La langue est humide et blanche en son milieu. Plus de photophobie; l'injection oculaire a disparu, et la sécrétion muco-purulente qui collait les paupières est tarie. Il subsiste encore une légère surdité. Il n'accuse aucun phénomène douloureux; se plaint seulement de son abattement. Peu de dyspnée: respirations 28.

Les bruits du cœur sont normaux; plus de bruit de galop.

Quelques râles de bronchite dans le poumon droit.

Très amaigri.

29.—Beaucoup mieux. La sensation d'abattement a disparu; se sent faible, mais mange avec appétit. Le cœur est bon. Dort bien. Un peu de transpiration la nuit.

1er mai.—Se lève aujourd'hui pour la première fois. Pouls 100. Cœur normal, mais le deuxième bruit à la pulmonaire est encore éclatant. Rien au poumon. A bon appétit et faim. Commence l'alimentation solide.

5.—De mieux en mieux. Très bon appétit. Un peu de constipation.

8.—Langue bonne. Grand appétit. Pouls fort et rapide: 104. Se lève un peu tous les jours: pas fatigué, dort bien, transpire un peu. La voix est complétement éteinte; ne souffre pas de la gorge.

Cœur violent. Claquement métallique de la pulmonaire. Rien au poumon.

Très amaigri. Pâleur des conjonctives. Essoufflement facile. Les mollets sont flasques et réduits à rien.

20.—Commence à reprendre son service et à veiller des malades. Voix toujours éteinte.

28.—La voix commence à reprendre sa tonalité: encore sourde et rauque.

20 juin.—Voix encore un peu rauque. Alopécie et chute des cheveux, qui dure depuis 15 jours.

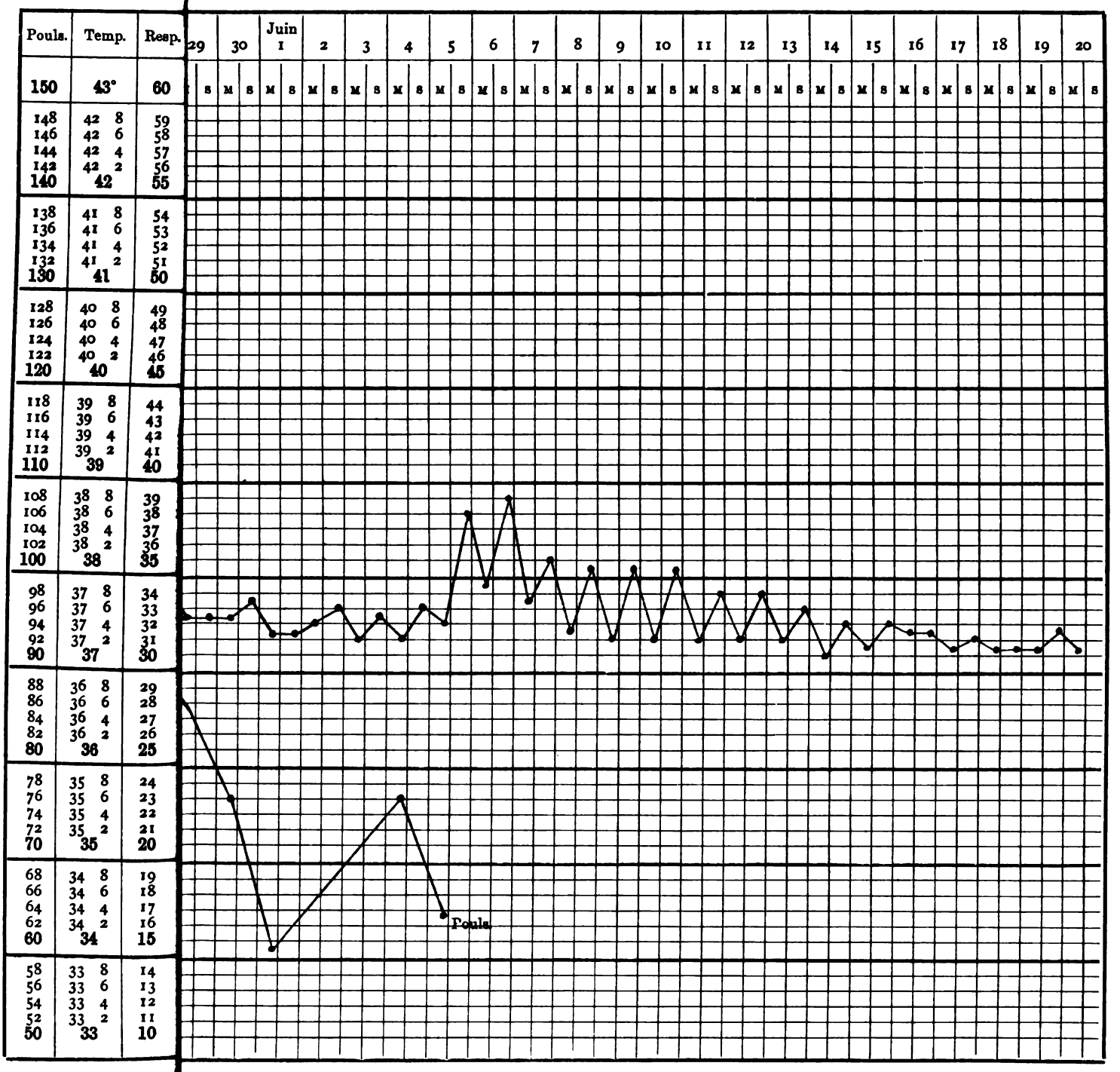
1er juillet.—Complétement guéri.

Observation III.

Frère Julien, né à Lyon, âgé de 29 ans; en Chine depuis quatre ans, de la Mission de Cha-la-eul.

Début, dans la nuit du 16 au 17 avril, par mal de tête.

17.—Au matin, il se plaint à moi de céphalalgie en casque, surtout sus-orbitaire. La langue un peu blanche. Il se sent abattu. Température 38°.4. Se couche dans l'après-midi, mais n'obtient pas d'amélioration; le soir, il chancelle en marchant. Température 38°.2. En même temps, douleurs des cuisses, mollets et genoux; il prend un purgatif salin le soir et a de nombreuses selles pendant la nuit.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Pouls.

18.—Température 38°.. Le mal de tête augmente; photophobie. Il se couche la journée et la nuit. Impatiences et contractions dans les membres inférieurs. Température: soir, 39°. Nuit mauvaise.

19.—Température 38°.5. Violente céphalalgie, lombalgie, douleurs dans les jambes. Photophobie intense; yeux légèrement injectés; pupilles dilatées. Bouffées de transpiration. Tousse un peu. N'est pas allé à la selle depuis hier à midi. Pouls fort: 100. Langue bonne, un peu blanche en son milieu. Rien au poumon, ni au cœur. Pas de douleur à la pression sur le ventre. Rate normale. 0.60 de calomel dans la matinée. Nuit bonne et calme.

20.—Céphalalgie frontale très forte; les cheveux font mal à leur implantation; hyperesthésie du cuir chevelu. Douleurs musculaires des jambes sont moins vives; les mouvements articulaires sont douloureux. Douleurs dans le bras et l'épaule droits.

Ayant voulu aller seul à la selle, il a été pris de défaillance, vertige, nausées, sueurs; on a dû le remettre au lit.

La peau est chaude. La bouche commence à être sèche; les lèvres se collent aux dents; la gorge est sèche; langue encore humide sur les bords, sèche sur le milieu. Pupilles dilatées. Pouls plein et régulier: 104.

Pression abdominale, un peu douloureuse à gauche; léger gargouillement à droite. Rate et foie normaux.

Diarrhée (purgation par calomel) de 4 heures du soir à 9 heures du matin: 14 selles. Toux sèche et quinteuse; rien au poumon. Cœur normal.

Légère épistaxis dans la matinée.

Une tache rosée sur la ligne axillaire, dans le flanc gauche.

Urine claire, pas d'albumine.

Céphalalgie violente dans l'après-midi; douleurs dans les membres.

Les selles diarrhéiques contiennent beaucoup de scybales. Coliques sèches, borborygmes et vents. Nuit agitée; se plaint constamment et ne dort pas.

21.—Très agité, jusqu'à midi. Température atteint 40°.3. Aussitôt, lavement phéniqué fait, une heure après, tomber température à 38°.6. À 5 heures, température a de nouveau atteint 40°.3; un deuxième lavement phéniqué fait tomber température à 38°.5, où elle reste toute la nuit.

Un peu avant midi, il a eu une violente crise de nerfs avec convulsions et contracture musculaire; était plié en boule; n'a pas perdu connaissance: durée, 40 à 45 minutes. Après la crise a eu une transpiration très abondante et infecte. Il a fallu le changer trois à quatre fois; cette transpiration continua une grande partie de la nuit et s'arrêta vers 5 heures du matin, après ingurgitation d'une tasse de café noir.

L'éruption dans l'après-midi commence à se montrer, mais très discrète.

22.—Amélioration dans son état. La température reste assez basse: 38°.6. Il est calme, ne souffre pas; il parle, s'assied sur son lit, et peut même aller seul à la selle. Nuit bonne.

23.—Ce matin, se sent bien. La langue est belle; plus de mal de tête; se lève seul; l'éruption est fort discrète: une vingtaine de taches maculo-papuleuses sur la poitrine et l'abdomen.

Le cœur est fort lent: 60; les bruits sont normaux.

Bourdonnements de l'oreille gauche, depuis hier, comme un sifflet de locomotive dans le lointain.

Douleurs articulaires clavo-sternales droites exagérées par les mouvements des bras et les fortes inspirations.

Sent un peu d'appétit.

25.—Les forces reviennent; dort, bon appétit; pas de sueurs. Peau légèrement moite. Il n'a plus de diarrhée. Se lève depuis deux jours pendant une heure; mais se sent très faible et il est brisé quand il se recouche. Les bourdonnements d'oreilles et les douleurs de l'articulation sterno-claviculaire ont cessé.

L'amélioration continue jusqu'à la fin du mois; les forces et l'appétit reviennent. Il reste debout toute la journée.

À partir du 1er mai, il se sent moins bien, malaise léger, fatigue, lassitude.

2.—Croit avoir trop mangé dans la matinée; à midi, se trouve sans appétit au repas; reste toute l'après-midi au soleil et sent les effets d'une réverbération assez forte. Dans la soirée, douleurs abdominales; ne peut aller à selle. Température 38°.8. Toute la nuit, mal de tête, dort mal.

3.—Souffre de céphalalgie, au réveil. Se lève de bonne heure quand même; mais mal à l'aise, nausées; ne peut rester à la Messe. Prend un léger purgatif qui n'agit que vers 2 heures de l'après-midi. À 2 heures, nouveau purgatif, qui produit peu d'effet: une selle seulement. Reste debout, mais se plaint de céphalalgie, douleurs abdominales et dans les jambes.

4.—Au réveil il a de la fièvre et souffre de la tête; souffre toute la journée; tête, reins, membres. À 11 heures, température 40°.3; à 4 heures, 41°.2; lavement phéniqué, gardé 25 minutes, amène une baisse de $\frac{4}{10}$°. Pouls 140. Nausées et vomissement bilieux et alimentaires. Selles nombreuses, peu abondantes: 8 à 10; jaunâtres (a pris un nouveau purgatif salin ce matin). Mauvaise nuit.

5.—Langue humide et blanche; léger mal de gorge. Douleurs sterno-claviculaires, dans les mollets; ne peut se tenir debout seul. Douleurs articulaires, surtout au poignet (a déjà souffert de rhumatismes en Europe et Australie). Pouls 128, plein.

Palper abdominal non douloureux. Douleurs épigastriques résultant de nausées.

Gorge un peu rouge; vésicules d'herpès sur l'amygdale droite.

Poumon et cœur normaux.

Dans l'après-midi, il prend, à 3 heures, 0.75 d'acide salicylique.

Vomit, vers 7 heures, bile en assez grande quantité. À 9 heures, nouvelle dose.

La fièvre tombe dans la nuit et revient à la normale dans la matinée. Les douleurs articulaires disparaissent.

6.—Dans la matinée, douleurs abdominales, lombaires. Les selles sont douloureuses, glaireuses, et peut-être même, au dire du malade, analogues à de la raclure de boyaux. Il y aurait un peu de sang. Les selles sont rares et suivies de douleurs siégeant au-dessus de l'anus.

7.—Ne souffre que de douleurs lombaires. S'alimente; prend une dizaine de bouillons et autant d'œufs. Les forces reviennent. Dort bien.

8.—Pouls plein: 64. Ne souffre pas. A transpiré beaucoup ces jours derniers dans la nuit et un peu dans l'après-midi.

Rien au cœur; langue bonne; appétit.

9.—Souffre en allant et après être allé à la selle. Les matières sont glaireuses, légèrement teintées de sang. Selles rares et peu abondantes.

Langue bonne. Pas de fièvre. Pouls 80.

Prescription: 15 gr. de sulfate de soude; ailante; lavement boriqué. Lait, bouillon, œufs.

11.—Sous l'influence de l'ailante et du purgatif, les selles sanguines ont disparu, ainsi que les douleurs abdominales; mais la fièvre reprend de nouveau. Température: matin, 39°; soir, 39°.4.

12.—La fièvre continue. Céphalalgie; douleurs dans les membres. Insomnie; transpire un peu. Nuit assez bonne.

13.—Douleurs articulaire et musculaire, surtout dans les mollets et avant-bras. Transpire un peu. Nuit assez bonne.

14.—La peau est chaude. Température 40°. Pouls 100. Souffre de la tête, céphalalgie frontale surtout. Légère photophobie et injection oculaire. Douleurs dans les membres et articles. Pendant la nuit se produit une éruption de taches rosées lenticulaires. Elles sont surtout abondantes sur le tronc, le ventre et le dos. Elles sont assez grosses, très roses, disparaissent sous la pression du doigt. Ce sont pour la plupart des macules, mais dans beaucoup d'endroits elles sont maculo-papuleuses. Deux ou trois plus volumineuses et foncées ont un point central rouge, qui ne disparaît pas sous la pression.

L'éruption existe également un peu aux avant-bras et dos des mains, à la face interne des genoux, sous la rotule, la face interne des malléoles. Sur le dos du pied gauche, éruption en rash, de la dimension de deux pièces de 5 francs, ne dépasse pas la naissance du cou.

La surface cutanée de la poitrine présente un réseau, à mailles larges; les capillaires sont très marqués, surtout sous la clavicule. Souffre un peu de la gorge, qui est rouge et sèche. Langue sèche. Pas de nausées. Cœur et poumon normaux.

Prescription: gingembre; 6 gr. de salicylate. Lait, bouillon.

Le gingembre provoque transpiration et un abaissement de température de $\frac{4}{10}$°. Dans l'après-midi, douleurs de tête, reins, jambes et articulations. Température 41°.2. Pouls 120. Saigne du nez légèrement.

15.—Même état. Température 41°.2. Épistaxis. S'alimente. Nouvelle transpiration abondante, provoquée dans l'après-midi. Pas de nausées. Dort mal, ne repose que vers 4 heures du matin.

16.—Ce matin, rémission assez marquée: 39°.6. Pouls 100. Figure abattue; traits tirés et amaigris. Peu de photophobie; voit trouble; a comme un nuage devant les yeux. Pupilles dilatées. Langue un peu sèche, surtout sur le milieu. Figure chaude, oreilles froides.

Tousse peu. La toux ne survient que lorsqu'il a parlé longuement, sèche et quinteuse.

L'éruption au niveau des genoux est à peine visible. Encore très confluente au dos, abdomen, parois latérales du tronc. Elle est plus ou moins colorée par moments. Elle s'accuse quand le malade reste quelques instants découvert. Les taches sont plus papuleuses qu'hier. Le rash qui occupait le cou du pied gauche a disparu.

Aux bras et avant-bras, l'éruption se voit encore. Sur le dos des mains, taches rouges punctiformes, disparaissant sous la pression; deux taches dans la paume de chaque main.

Cœur normal. Rate augmentée de volume, sensible à la pression: 13 × 17 cm. Rien au foie ni au poumon. Un peu de météorisme. Urine 1,800 gr.; riche en dépôts uratiques; pas d'albumine.

Plusieurs selles dans la journée, rendues sans douleurs; couleur jaune très foncée (bronze).

A beaucoup saigné du nez dans la matinée et a éprouvé du mieux. Lourdeur de tête, plutôt que céphalalgie véritable. Douleurs musculaires et articulaires; il semble que la douleur occupe les os des jambes. Fièvre toute l'après-midi. La nuit n'est bonne qu'à partir de 4 heures.

Prend 0.75 de quinine, qui ne donnent aucun résultat.

17.—Abattu. Langue rouge et sèche, pas de fuliginosités. Œil un peu injecté; peu de photophobie. Bourdonnements d'oreilles et légère surdité (quinine). Pouls 100. Température 40°.1.

Peau sèche. Éruption moins colorée à la poitrine, dos, abdomen.

Plusieurs de ces taches ne disparaissent pas complétement sous la pression et laissent un petit point central violacé. Quelques taches paraissent aux genoux, faces internes des cuisses et jambes; sont maculo-papuleuses, assez larges (petite lentille), un peu irrégulières, disparaissent sous la pression, mais se reformant très vite.

Douleurs dans les muscles. La plus légère pression sur les extenseurs de la cuisse et ceux du mollet fait crier le malade, qui reste absolument immobile dans son lit.

Rien au cœur. Un peu de congestion en arrière et surtout à droite.

La rate déborde de 3 cm. les fausses côtes où les doigts la trouvent douloureuse à la pression, surtout au niveau du dixième espace intercostal.

Rien au foie.

Ballonnement du ventre et gargouillement dans les deux fosses (a pris un léger purgatif salin).

Après-midi assez bonne, malgré la température très élevée. Deux affusions à 11½ heures et 4 heures qui amènent une baisse de température de $\frac{4}{10}$ et 1 degré. La peau reste un peu moite. A été bien jusqu'à minuit. De ce moment à 4 heures très agité; délire, nausées, vomissements. Dort de 4 à 7 heures.

18.—Température: matin, 40°.2. Pouls 104; un peu dicrote. Air abattu. Langue sèche. L'éruption pâlit; disparue par places. Encore abondante sur la poitrine et le dos.

Vue trouble; surdité très marquée.

Respiration irrégulière, saccadée: 28. Congestion de la base gauche.

Respire mieux quand il est assis.

Cœur: dédoublement intermittent à la base. Selles diarrhéiques: trois dans la journée.

Rate à peine sensible à la pression.

Prescription: deux lavements boriqués (acide phénique douloureux à cause de dysenterie préalable) et deux affusions froides. Digitale 0.50.

Délire dans l'après-midi. Ne dort pas.

19.—Matinée mauvaise, agitée; délire dans l'après-midi. Transpiration abondante et baisse de température. Nuit très agitée. Saigne du nez.

20.—Ce matin, air abattu, visage calme, non vultueux, œil éteint, pupilles dilatées. Langue sèche et rouge. Peu de photophobie. Légère surdité. Céphalalgie. Trouble de la vue. Diarrhée. Pouls dicrote: 104. Éruption a disparu sur la poitrine; il reste encore beaucoup de taches sur le ventre, mais plus pâles; sur les bras, certaines taches disparues, laissent, comme vestiges, une teinte marron, comme une vieille ecchymose, en voie de régression.

L'intelligence n'a pas toute sa lucidité; les réponses ont un caractère un peu vague.

Rate grosse et dure, très bien sentie: 17 × 20 cm.

Cœur: plus de bruit de galop, un peu fœtal.

Gargouillement et léger météorisme.

Paralysie du sphincter vésical; pisse sous lui sans s'en rendre compte. Pas de dilatation de la vessie.

Légère congestion pulmonaire.

Très abattu dans l'après-midi. Nausées très violentes; vomissements glaireux et biliaires. A rendu un lombric en vomissant. Délire, idées très variables. Carphologie. Les extrémités se refroidissent à plusieurs reprises: bons effets d'ingestion de rhum.

21.—Abattu dès le matin; très vite essoufflé quand il fait un mouvement. Pouls plein: 116. Quelques soubresauts tendineux.

Langue sèche et rouge. Trouble de la vue. Surdité. Réponses peu claires; il divague légèrement.

Disparition de l'éruption. Plus de céphalalgie; mais faiblesse générale. Mollets encore douloureux à la pression.

Cœur normal.

Rate moins douloureuse à la pression.

Légère congestion pulmonaire.

Raie méningitique assez nette.

22 et 23.—Matinées et après-midi sont assez bonnes. État de stupeur profonde. La fièvre s'allume dans l'après-midi. Transpiration abondante à odeur fade, écœurante.

Un peu de délire vers le soir. Dyspnée par obstruction nasale.

24.—Très abattu. Chute brusque de thermomètre de 39°.8 à 38°.2. Pouls dicrote: 104. Yeux excavés. Sueurs froides et un peu visqueuses. Incontinence d'urine; fait sous lui. Répond mal, pas de précision et gêne d'articulation; sécheresse de la gorge; parole saccadée et tremblotante. La langue est rôtie, les lèvres fuligineuses. Surdité. Sudamina nombreuses. La transpiration, cette nuit, très abondante: les couvertures et matelas traversés. Tremblements musculaire et tendineux.

Pas de distension de la vessie; incontinence par paralysie et non rétention.

Cœur bien frappé, un peu faible.

De 10½ à 3 heures, il est resté dans un état de torpeur adynamique complet.

Peu à peu, sous l'action d'acétate d'AzH^3, extrait de quinquina, digitale, alcool, les forces sont revenues et à 5 heures la température s'est mise à remonter: 39°.5.

Nuit calme; sommeille; pisse au lit.

25.—Répond mieux qu'hier. Langue sèche et fuliginosités labiales. Parle plus facilement. Entend mieux; quelques bourdonnements.

Articulations très douloureuses, surtout celle du coude; le moindre mouvement est douloureux et lui fait pousser des cris. L'avant-bras est fléchi et en demi-pronation; main également fléchie sur l'avant-bras depuis trois jours.

Cœur mieux frappé: 100. Légère dyspnée: 36. Respire surtout par la bouche.

Sudamina abondantes, laissant de petites érosions punctiformes de la peau.

Escarre fessière.

Palper abdominal peu douloureux.

Mêmes prescriptions qu'hier.

Abattu toute l'après-midi, reste somnolent, très faible, mais prend tous les aliments qu'on lui présente.

26.—En soulevant le malade, on constate qu'une escarre sacrée, assez étendue, est envahie par de petits vers blancs. Cette escarre est douloureuse. Le malade se plaint aussi de douleurs et démangeaisons, sous les aisselles. La peau est rouge, légèrement ulcérée et de petits vers s'y trouvent également; enfin, quelques petits vers dans l'œil droit qui est rouge et laisse s'écouler une sérosité muco-purulente. Lavages fréquents phéniqués et saupoudrage avec magnésie calcinée et iodoforme, āā. Reste abattu et somnolent l'après-midi et nuit. Dans la journée, parle plus facilement.

27.—Ce matin les traits sont très tirés. Yeux enfoncés; écoulement muco-purulent et injection de l'œil droit. La peau de la poitrine est le siége d'un érythème formé par de longues traînées rouges.

Plus de vers. Escarre sacrée très douloureuse dès qu'on bouge le malade. Une autre escarre au niveau de l'épine iliaque postérieure. La première large comme la paume de la main; l'autre comme une pièce de 1 franc.

Pouls et cœur bons: 100. Pas de dyspnée. Langue sèche; dents fuligineuses. Ne souffre pas et prend bien. Plus d'incontinence d'urine. Deux selles dans la journée.

Après-midi calme. Dort, mais souffre de ses escarres dès qu'il fait un mouvement.

28.—Les selles prennent une consistance plus solide; sont moulées. La quantité d'urine et la fréquence des mictions augmentent. Urine très claire. Crache beaucoup de mucosités épaisses, gris jaunâtre, teintes parfois d'un peu de sang; elles viennent surtout de la gorge.

Cauchemars dans la journée et la nuit; sorte d'hallucinations qui persistent même à l'état de veille: il lui semble qu'il y a plusieurs personnes dans son lit.

29.—Langue large, humide et rouge. Dents et lèvres dépouillées de leurs fuliginosités. Figure reposée. Pouls petit: 76. Ne souffre pas, si ce n'est de ses escarres: fessière, dorsale et axillaire.

Peu d'appétit, pas de nausées. Répond assez bien. Moins de surdité. Plus de gêne d'articulation. Inégalité pupillaire.

Persistance des douleurs musculaires des mollets; peut librement remuer bras, avant-bras et mains.

Bruits du cœur normaux. Parfois dédoublement pulmonaire au moment de l'inspiration.

Ventre souple, exploration facile; légère sensibilité des fosses iliaques. La rate ne déborde plus les fausses côtes.

Escarres fessières et de la crête, en voie de guérison (magnésie calcinée, iodoforme; poudre quinquina), mais toute une série de petites escarres est produite (sept à huit), larges comme des pièces de 1 franc, sur le trajet d'une ligne allant de l'épine iliaque postérieure à la pointe scapulaire. La peau, au niveau de l'angle de l'omoplate, est rouge, un peu œdématiée et une escarre est à craindre.

Prescription: acétate d'AzH^3, extrait de quinquina. Champagne, Porto, lait, œufs, bouillon. Suppression de digitale.

30.—Journée très calme, un peu de délire. S'alimente bien. Selles moulées: deux dans la journée et deux la nuit. Urine beaucoup. Souffre de ses escarres seulement quand il se remue. Dort peu.

31.—Pouls plein: 60. Langue et lèvres totalement dépouillées. Ne souffre pas; ne sent même pas d'abattement. Plus de douleurs dans les mollets. Plus de surdité. Escarres en bonne voie. Celles du côté sont à peu près sèches. Celle qui menaçait l'omoplate ne s'est pas produite. Nouvelle escarre à la face postéro-externe du tendon d'Achille droit. Obnubilation de la vue.

1er juin.—Soirée agitée; ne souffre pas, mais se remue constamment dans son lit. Potion calmante le fait dormir toute la nuit et une partie de la matinée. Se réveille tout abruti et reste calme la journée du lendemain.

3.—Très grand appétit. Rêve, et pendant son sommeil entend des voix qui lui disent de se lever; il essaye de descendre de son lit. Deux selles par jour, moulées.

Urine près de 3 litres, claire. Pas altéré. Boit seulement du bouillon et un peu de vin.

4.—Depuis une semaine la température se tient à la normale entre 37°.2 et 37°.4. Très faim.

Langue bonne. Traits reposés. Conjonctive pâle. Très amaigri. Ne souffre pas; se sent faible et épuisé par le moindre mouvement (refaire son pansement, se bouger pour arranger son lit). Trouble de la vue. Surdité légère. Souffre un peu de l'escarre fessière qu'il écorche pendant la nuit. Les autres escarres sont complétement guéries.

Pouls plein: 76; premier bruit de pointe très énergique; premier bruit pulmonaire soufflant. Pas de souffle dans les vaisseaux du cou.

La rate a repris ses dimensions normales.

Commence aujourd'hui l'alimentation solide: pain, œufs à la coque, poulet; 10 cgr. tartrate ferrico-potassique et une cuillerée de liqueur de Boudin.

6.—Se trouve très bien. Nuits un peu agitées. Selles régulières. Urine beaucoup, à peu près 3 litres.

Légère ascension du thermomètre; hier, 38°.6. S'était levé pendant une heure. Ce matin, pouls lent et assez plein: 64. Langue belle; souffre un peu des mollets. Souffre à peine des escarres. Légères escarres aux deux épines de l'omoplate. Persistance de surdité. Bourdonnements, quand il prend la position verticale. Trouble de la vue persiste. Digestions aisées; un peu de flatulence et borborygmes. Abondante débâcle pendant la nuit.

10.—Depuis quatre jours qu'il se lève, il a des ascensions de température le soir. Souffre pendant la nuit de douleurs dans les mollets, les articulations des orteils, medio-tarsiennes, et le talon gauche. Au niveau de celui-ci siége un large ecchymose (2 francs) la pression y est douloureuse. Le malade ne s'y est point cogné. L'ouverture ne donne issue à rien; cependant, il éprouve les douleurs d'un abcès.

Les escarres sacrées ne sont pas tout à fait guéries; il les écorche pendant la nuit.

Les mollets sont douloureux à la pression, raides, quand il se lève, et incapables de le porter.

Douleurs articulaires des mains et poignets ont cessé. Vue et ouïe normales quand il est couché; trouble et bourdonnements quand il est debout. Persistance de douleur dans le talon.

Le malade se levait depuis un mois, quand l'épiderme des orteils et du talon a commencé à desquamer, se détachant par larges placards, surtout après un bain. Cette desquamation a duré plus d'un mois.

Observation IV.

Frère Candide, né à Griéges (Ain), âgé de 39 ans; en Chine depuis quatre ans, de la Mission de Cha-la-eul.

Malade depuis le lundi 22 avril: inappétence, courbature, crampes d'estomac, point de côté, toux légère, nausées, insomnie.

23.—Un semblant de mieux. Il peut veiller ses malades.

24.—Dans la matinée, il se rend au Nan T'ang; se sent très fatigué en descendant de son âne; défaillance, pseudo-syncope au moment de se mettre à table. Ne peut déjeuner. Il revient, vers 1 heure, à Cha-la-eul et se met au lit. Il éprouve de la lourdeur de tête et de la courbature. À 6 heures du soir il prend un purgatif et le vomit. Nuit très agitée, transpiration, claquements de dents, frissons.

25.—Prend un nouveau purgatif dans la matinée, qui fait de l'effet. Toute la journée il n'est pas trop souffrant. Céphalalgie en casque; la courbature s'exagère; nausées fréquentes. Il peut dormir un peu dans l'après-midi, et quand il se réveille, il ne souffre pas. Il veut essayer de refaire sa veille; mais doit se recoucher aussitôt. Nuit pénible; douleurs et langueurs d'estomac; nausées et vomissement qui soulagent momentanément la douleur, et il peut reposer dans la deuxième partie de la nuit.

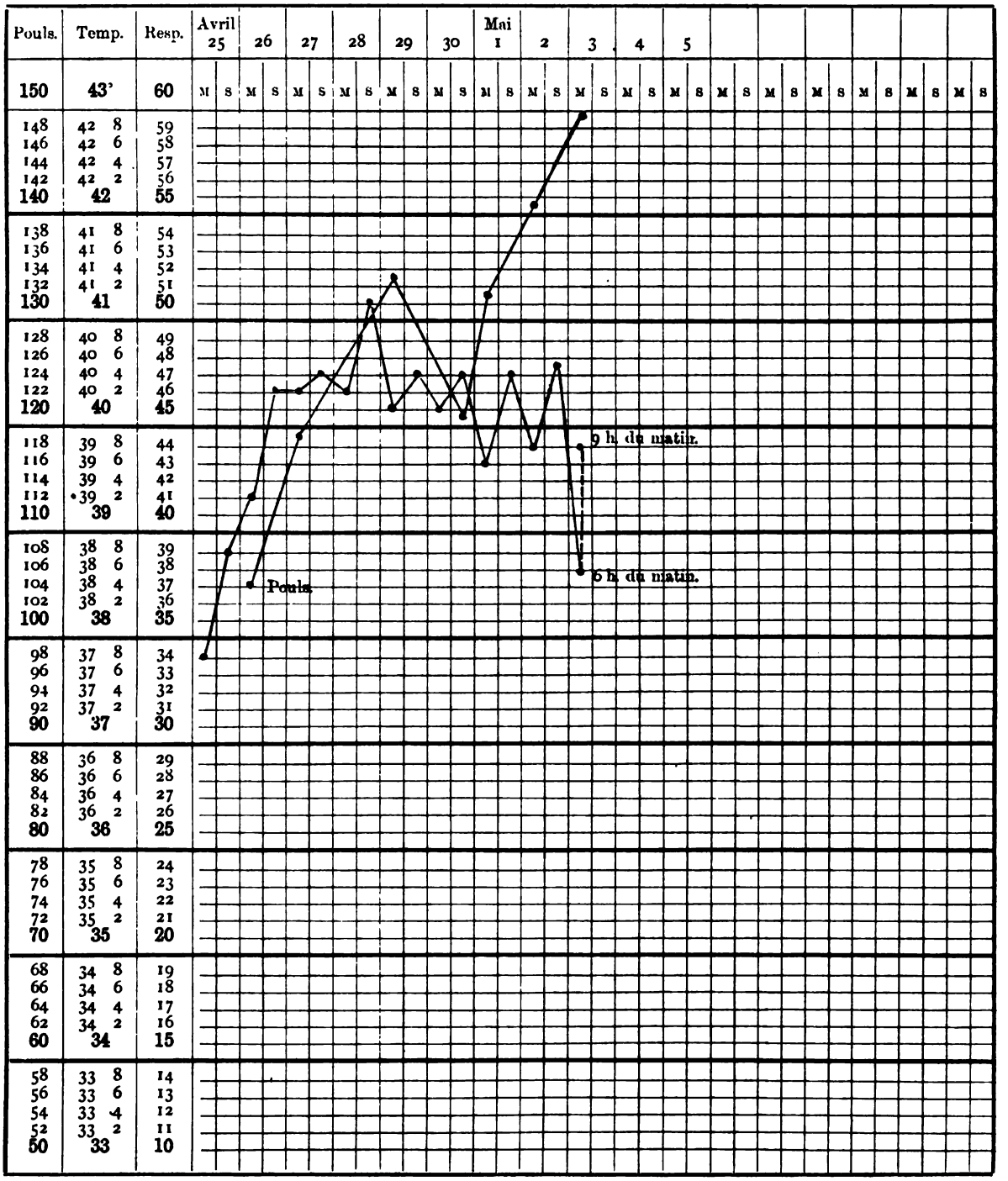
26.—Ce matin la peau est chaude, langue blanche. Le malade est calme et répond très clairement à mes questions. Pouls plein: 104; légère photophobie; œil non injecté. Violente céphalalgie en casque, exagérée par les mouvements de la toux. Douleurs lombaires et interscapulaires, surtout quand il tousse; la toux provoque également de la douleur dans les hypochondres. Légère douleur à la pression de l'hypochondre gauche.

Rate, foie, cœur normaux. Pas de traces d'éruption.

La nuit est mauvaise jusqu'à minuit: céphalalgie violente et douleurs lombaires. Dort le reste de la nuit.

27.—Journée assez calme; se plaint d'une courbature générale avec douleurs articulaires très vives. Nausées fréquentes avec cardialgie; vomissements alimentaires; vomit aussi un lavement phéniqué. Dans l'après-midi, céphalée terrible avec phénomène de tension intracranien; un peu soulagé par la calotte de glace. Température reste élevée; et les affusions froides et lavements phéniqués ne la font pas baisser. Ils produisent pourtant une sensation de mieux être une à deux heures, et pendant lesquelles le malade peut reposer. Quatre bains et trois lavements dans la journée et la nuit. Les lavements sont rendus avec des scybales. Le

OBSERVATION IV.



malade accuse des douleurs abdominales qui cessent avec l'expulsion de matières dures. Toute l'après-midi, transpiration très abondante. Son odeur est identique à celle des autres: écœurante, fétide, cadavérique. La nuit, la transpiration continue; le malade pousse de petites plaintes; change souvent de position dans son lit, mais sommeille. La nuit est, en somme, assez bonne.

28.—Dès le matin, température est élevée: 40°.2; à 1 heure de l'après-midi, elle atteint 41°, et reste à ce chiffre toute la soirée et la nuit, jusqu'à 4 heures du matin. Acide salicylique, bains, lavements froids; transpiration abondante, rien ne fait baisser la température. Douleurs de tête très violentes nécessitent la calotte de glace. Douleurs gastriques, sortes de crampes, s'accompagnant de nausées et de vomissements, dès que quelque chose a été ingurgité; l'estomac, refuse tout aliment. Plusieurs selles, grâce à un lavement purgatif (sulfate de soude 30 gr., follicules de séné 15 gr., eau 200). Délire dans l'après-midi; le délire n'est pas très violent, et le malade, par moments, peut se rendre compte de l'incohérence de ses idées; il dit lui-même: "Je radote." Éruption commence à se montrer: parois latérales du thorax et avant-bras.

Nuit très pénible. Douleurs généralisées à tous les membres, articulations. Dyspnée et intermittences respiratoires. Plaintes perpétuelles. Carphologie. Un peu de délire. A commencé à reposer vers 4 heures du matin.

29.—Un lavement purgatif ce matin, de bonne heure, car il n'était pas allé à selle dans la nuit.

Quand je le vois, à 10½ heures, il est assez abattu, l'œil est terne; le mal de tête est moins violent qu'hier. La langue est blanche et encore humide; pas de fuliginosités, un peu de photophobie.

La peau est chaude et légèrement moite. Température 40°.1. Le pouls est faible, dicrote et rapide: 133; quelques soubresauts tendineux.

Il se plaint surtout de douleurs à l'épigastre, de nausées et de vomissements qui se produisent dès qu'il a absorbé quelque chose. En même temps, douleurs articulaires. Sécheresse de la gorge, soif. Il est très affecté de son état, se croit perdu; s'est confessé dans la matinée et fait rassembler tous ses papiers.

L'interrogatoire le fatigue et à la fin il répond d'une voix faible; en même temps, tout cela l'énerve.

L'éruption qui a commencé hier s'est un peu développée pendant la nuit. Les taches rosées se montrent aux parties déclives du flanc, dans le dos, partie supérieure de la poitrine, la face interne des genoux, l'avant-bras et la paume des mains. Ce sont de petites macules roses, maculo-papules par places. Au pli du coude, surtout à droite, elles ont l'aspect de petites pétéchies punctiformes, au nombre d'une trentaine, violacées, ne disparaissant pas sous la pression du doigt et rappelant de grosses piqûres de puces.

Rien au poumon, au cœur, au foie. Pression de la fosse iliaque droite non douloureuse.

La rate est augmentée de volume, et facile à délimiter par la percussion ce qui ne se pouvait faire il y a deux jours. Les dimensions sont: D.T., 10½; D.V., 8.

L'après-midi est assez agitée. Il ne souffre pourtant pas trop, si ce n'est d'une céphalalgie fort intense nécessitant la calotte de glace. Il a un besoin intense de sommeil qu'il ne peut satisfaire. Se plaint d'un malaise général. Il transpire dans la soirée, mais cette transpiration n'est pas, comme les jours précédents, suffisamment abondante pour nécessiter de changer les draps.

Les douleurs gastriques sont calmées par la potion de Rivière; moins de nausées, pas de vomissements.

Selles fréquentes, molles, très fétides, à peu près toutes les deux heures. Urine beaucoup et très facilement. Un peu de délire.

30.—Il se trouve un peu mieux ce matin, bien que le thermomètre soit encore à 40°. Photophobie, brouillards devant les yeux; les conjonctives ne sont cependant pas injectées. Lourdeur de tête, plutôt que céphalalgie. Langue blanche et humide sur les bords; pas de fuliginosités. Pouls faible: 120. Peau chaude et un peu moite. Pas de transpiration dans la matinée.

L'éruption, moins marquée qu'hier, a même disparu par places. Dans la paume des mains, il ne reste plus que deux à trois taches rose pâle de 2 millimètres de diamètre à peu près. Sur le cou du pied gauche, éruption en rash, par la confluence des taches de teinte rouge vif, disparaissant sous le doigt; à peine indiquée du côté droit. Pas de démangeaison. Rien à la plante du pied. À la face interne du genou quelques petits piquetés punctiformes.

Les douleurs gastriques ont presque totalement disparu. Plus de nausées. Rien au cœur, ni au poumon.

Pression douloureuse dans la fosse iliaque gauche et sur la rate.

La douleur de gorge a disparu. La voix est faible et sourde par gêne de l'articulation.

Urine albumineuse.

Prend 2 litres de lait, du vin de Porto.

Très agité dans l'après-midi. Il rêvasse; carphologie. Ne prend qu'un peu de thé. Température oscille autour de 40°.5. Bain qui le soulage momentanément; puis, 25 minutes après, douleur violente au creux épigastrique, sensation de froid, grelotte; il faut le plier dans des couvertures en peau de mouton et cependant la température ne baisse pas.

Nuit assez mauvaise.

1er mai.—La faiblesse fait des progrès. Incapable d'aller seul à la selle. Il faut le soulever, même pour l'asseoir sur le bassin. Les selles sont moulées. En allant à la selle, ce matin, légère défaillance. Température 39°.6 (dans l'aisselle, jusqu'ici on la prenait dans la bouche). Pouls faible: 132. Se sent très faible. Parle à peine. Ne peut se servir lui-même, prendre quelque chose sur la table placée à côté de lui. Il se plaint d'un peu de courbature dans les mollets et de bourdonnements d'oreilles.

La figure n'est pas congestionnée; elle est chaude; oreilles froides; pupilles dilatées.

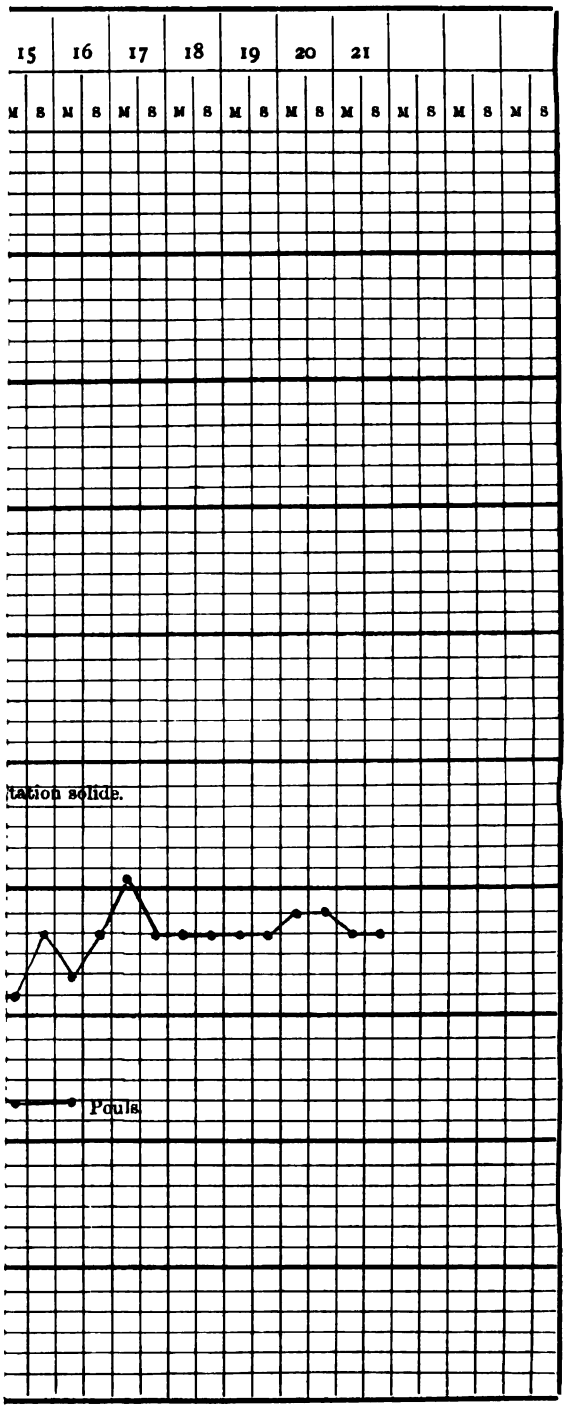
Il reste inerte dans son lit, les yeux fermés; de temps à autre, quelques contractions musculaires ou soubresauts tendineux.

Il répond aux questions, mais il faut parler très fort pour l'arracher à sa torpeur.

La peau est moite. Une nouvelle éruption de taches rosées, très irrégulièrement distribuées sur le ventre, la poitrine, les parois latérales du thorax. Pas dans le dos, les membres. S'arrête à la naissance du cou; celle de la paume des mains et avant-bras a totalement disparu.

L'éruption laisse sur le dos des mains dans les points où elle a disparu des taches blanchâtres qui donnent, avec la couleur plus foncée de la peau, un aspect marbré à cette dernière.

Sur le cou de pied gauche, l'éruption a une teinte plus foncée qu'hier; provoque un peu de démangeaison.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tation solide.
Pouls.

Érythème fessier, par fusion de la base inflammatoire de 60 à 80 macules sur la partie supérieure de chaque fesse; provoque de la démangeaison.

Cœur fœtal. Un peu de congestion pulmonaire à droite. Urine abondante, 1,800 gr. par 24 heures, colorée, albumineuse, 1 gr. d'albumine; 16 gr. d'urée par litre.

Prescription: caféine, 0.50; lait, vin de Porto, lavement phéniqué, bain froid.

Il reste assez calme dans son lit, l'après-midi, mais rêvasse constamment. Il n'accuse aucune douleur. Ses rêvasseries ont un caractère spécial; depuis trois jours qu'elles sont très marquées, elles roulent chaque jour sur un sujet différent: hier c'était la religion; aujourd'hui il parle de la France et de sa grandeur.

La rêvasserie continue pendant la nuit. Il prend un purgatif salin vers 4 heures du matin. Les selles sont jaunes et noires, fréquentes, et horriblement fétides.

2.—Très abattu; répond assez bien aux questions qu'on lui pose. La fièvre reste haute: 39°.8 le matin; 40°.6 dans la journée. Le pouls devient plus rapide et plus faible: 140.

Il délire pendant la nuit, jusqu'à 6 heures du matin. Il commence à transpirer à ce moment. La sueur a toujours son odeur cadavérique. Il s'est alimenté un peu dans la journée; mais il n'a rien pris pendant la nuit. Urine plus foncée: urée 20; albumine ½ gr.

3.—À 6 heures du matin, la température indiquait une baisse subite: 38°.6; un calme apparent s'en suivit et les Frères qui le veillaient crurent à une amélioration.

Quand je vis le malade à 9½ heures, il était dans une dyspnée profonde; la respiration courte, irrégulière; 60 inspirations par minute. Le pouls, filiforme, était à 154. Les bruits du cœur ne s'entendaient plus, marqués par les ronchus de la poitrine et de la gorge. La langue s'agite constamment dans la bouche; les lèvres fuligineuses; les yeux légèrement vitrés. Les extrémités, pieds, mains, oreilles, sont froides et cyanosées. De temps à autre des nausées. Il délire; carphologie. J'essaye de le tirer de sa stupeur; il ouvre péniblement les yeux et me reconnaît vaguement.

Deux injections d'éther; injection de 1½ gr. de caféine à quatre piqûres, à quart d'heure d'intervalle, n'amènent aucune modification au cœur. Il meurt vers 11½ heures par syncope et un flot d'écume sanguinolente sort de la bouche.

Impossibilité de faire l'autopsie.

Avait eu, avant de venir en Chine, des attaques de rhumatisme articulaire aigu.

Observation V.

Frère Basilius, né à Saint-Genis l'Argentière (Rhône), âgé de 23 ans; en Chine depuis quatre ans, de la Mission du Nan T'ang (Pékin).

Début mercredi 17 avril par céphalalgie et douleurs dans les jambes; dans l'après-midi, légère épistaxis. La nuit fut assez bonne.

18.—Mal de tête augmente; lombalgie et surtout douleurs dans les jambes, quand il est couché. La température n'a pas été prise, mais le malade dit avoir eu une température élevée, dont il a jugé par son malaise. Il a pu pourtant faire sa classe. Nuit agitée.

19.—Mal de tête gravatif, en casque, irrégulier, survenant ou s'exagérant tout à coup, et disparaissant de même. Il a pu faire sa classe. Nausées fréquentes.

20.—Température 39°.8, le matin; langue blanche, céphalalgie en casque, jambes cassées, abattu, souffre surtout de douleurs dans les jambes quand il est couché. Prend, vers 10 heures, 0.80 de calomel; vomit. Reste couché toute la journée; dans l'après-midi, se sent très faible; douleurs augmentent. Température 40°; il entre à l'hôpital.

Nuit agitée; dort peu ou pas; bouche sèche; très altéré.

21.—Ce matin la peau est chaude. Température 40°. Pouls fort: 104. Langue blanche, un peu sèche sur le milieu. Photophobie; peu d'injection conjonctivale. Palpation abdominale; douleurs et gargouillements iliaques à droite. Rate normale. Prend 0.60 de calomel; selles très fétides; salol 0.75, acide salicylique 0.75.

Cœur et poumon normaux.

Lait, bouillon; extrait de quinquina.

Dans l'après-midi, vers 5 heures, a quelques frissons, nausées et vomissements. Température très élevée, mais abaissée sous l'influence de 0.75 d'acide salicylique.

Un peu de sueur.

L'éruption commence à paraître, dans l'après-midi, sur les avant-bras et dos des mains. Nuit bonne.

22.—Langue blanche. Yeux peu injectés; photophobie; pupilles dilatées. Figure congestionnée et brûlante. Oreilles froides. Peau chaude et moite. Température 39°.6. Pouls dicrote: 108.

Éruption: quelques taches sur la peau de la poitrine et abdomen, la face dorsale des mains et avant-bras. Rien au dos et aux cuisses. Les taches ne sont que très petites sur la poitrine et abdomen. Sur la face dorsale des mains elles forment des macules rouges, de la dimension d'une pièce de 0.20 cents à une lentille. Dans la paume de la main, on soupçonne les points où se fera l'éruption à une teinte rosée, par places, sous l'épiderme.

Les selles sont nombreuses; couleur verdâtre, due au calomel; contiennent en suspension des grumeaux blanchâtres, identiques à des débris de muqueuses, qui sont probablement des coagula de lait. Elles sont très fétides.

Palpation abdominale douloureuse à droite et à gauche. Pression sur le foie et rate douloureuse; ces organes sont normaux, comme dimensions. La pointe du cœur bat dans cinquième espace, à 4½ cm. en dedans du mamelon. Le premier bruit de la pointe est fort; celui de la base est dédoublé (deuxième bruit) et le claquement de la pulmonaire est très éclatant.

Un peu de congestion pulmonaire.

Très altéré. Quelques nausées.

Urine trouble; traces d'albumine.

Prescription: lait, bouillon, Porto. Acide salicylique 0.75; lavements phéniqués, avec eau 200 gr., acide phénique 0.15.

Le thermomètre, très élevé toute l'après-midi, n'a été modifiée ni par l'acide salicylique, ni par le lavement phéniqué.

Nuit mauvaise; agité, oppressé.

23.—Moins de céphalalgie, moins de photophobie: il voit trouble. Figure moins congestionnée qu'hier, mais chaude; toutefois oreilles froides et un peu cyanosées.

Le pouls est bon et fort: 100; dicrotisme intermittent. Respiration calme: 28. Langue blanche et humide.

L'éruption n'a pas progressé depuis hier; cependant la poitrine offre sur sa face antérieure une teinte rose marbré plus accusée.

Pression de la fosse iliaque droite douloureuse, non à gauche. Sept à huit selles dans les 24 dernières heures.

Quelques nausées dans l'après-midi. Prend du calomel et un lavement phéniqué avant midi, et ne va à selle que vers 5 heures. Dans l'après-midi, la température étant très élevée, un bain froid par affusion. Pas d'abaissement de température, mais bien-être et il s'endort. La nuit est assez calme. La peau moite.

24.—Langue sèche et blanche au milieu; pas de fuliginosités sur les lèvres. Œil injecté et larmoyant; moins de photophobie. La céphalalgie a diminué. Se plaint encore des reins. La gorge est sèche, et l'articulation des mots gênée. Peau chaude. Température 39°. Pouls 108.

L'éruption commence à disparaître. Il n'en reste que sur les bras, la poitrine; quelques taches dans le dos. Les traces de l'éruption se voient bien, surtout quand la région n'est pas trop vivement éclairée.

Selles peu nombreuses, peu abondantes, claires, très liquides et fétides. Au cœur on perçoit toujours un bruit de galop à la base. Rien au poumon.

Douleur à la pression de la fosse iliaque droite et gauche. Rate non augmentée. Quelques coliques intestinales; borborygmes et vents. Épistaxis légère dans l'après-midi qui est calme. Vers 6 heures, sorte de syncope. La figure, les mains, les pieds sont froids; les doigts, oreilles, lèvres sont cyanosés. Cet état syncopal dure une heure environ; il entend, comprend, mais ne peut répondre. La nuit fut très agitée; on dut le maintenir dans son lit, et même lui attacher les mains. Il fait des bonds dans son lit, crie, se lève, veut sortir et fait sous lui.

25.—La matinée est plus calme. Dans l'après-midi, il est un peu agité, mais facile à maintenir. Fait plusieurs fois sous lui. La nuit, il dort mal, parle d'une façon incohérente.

26.—Langue sèche, un peu tremblotante, pas de fuliginosités. Peau assez fraîche. Température 38°.6. Le pouls est plein, régulier, grâce à une infusion de digitale prise hier soir: 104. État sub-délirant; répond mal aux questions qu'on lui pose. Il est encore très agité. Ce matin, je le trouve en chemise dans un fauteuil, et il faut crier pour lui faire regagner son lit.

Persistance du bruit de galop. Rien au poumon. Pression abdominale légèrement douloureuse. Foie normal; rate un peu augmentée de volume. La peau porte encore quelques traces d'éruption.

Légère rétention d'urine: n'a pas pissé durant les 24 dernières heures. A pissé un peu ce matin. Est-ce un effet de la digitale? Selles liquides, jaunes, fétides, contiennent un peu de sang vermeil. Ce sang vient plutôt d'hémorrhoïdes. Le fait s'est déjà produit pendant qu'il était bien portant.

27 et 28.—Les journées sont agitées; sub-délire et torpeur alternant. Les selles amènent un mieux être qui permet au malade de reposer un peu.

29.—Abattu; répond vaguement. Légère surdité. Pouls plein et fort. Cœur bien marqué. Souffle au premier bruit à la pulmonaire, bruit de galop à la base. Épistaxis légère. Un peu de photophobie. La langue est sèche. Douleur à la pression de la fosse iliaque droite. Rate augmentée de volume. Rien au poumon.

Quelques nouvelles taches rosées sur le flanc gauche.

Urine: albumine en quantité minime. 18 gr. d'urée par litre.

30.—Reste somnolent, affaibli. Un peu de dyspnée d'origine laryngée. Il ne transpire pas. Tendance à la constipation. Il ne va que par purgatif ou lavement. Les selles sont alors liquides, d'odeur fétide, et leur évacuation amène un état de mieux être très manifeste. Le pouls est plein: 88. Défervescence commence. Il se plaint de temps à autre de céphalalgie, de courbature généralisée, et se sent très las.

La rate est bien délimitée, par percussion; un peu douloureuse à la pression. Douleur dans les fosses iliaques.

Rien au poumon. Dédoublement du deuxième bruit persiste.

1er mai.—Ne souffre pas, si ce n'est d'une lassitude générale; dès qu'il fait un mouvement, il est essoufflé, ne peut se tenir assis sur son lit. Respiration irrégulière, très accélérée parfois, elle s'arrête complétement ensuite; puis survient un soupir, et la respiration recommence, calme et régulière. Il reste couché sur le dos, l'œil vague, comme dans une rêverie. Il n'a pourtant pas la stupeur des typhiques. Mouvements d'impatience fréquents; saute dans son lit, agite bras et jambes. La langue est humide et blanche. Photophobie, légère injection oculaire; adhésion des paupières à cause des mucosités; pupilles normales. Légère surdité.

Peau sèche; on a vainement essayé de le faire transpirer avec une infusion de gingembre.

Pouls dicrote: 72. Cœur dédoublé. Rien au poumon.

Tendance à la constipation; ne va que par lavements. Altéré. Urine beaucoup: environ 2 litres. Douleur à la pression des deux hypochondres.

2.—Calme. Pouls 76. La tête est lourde; vertige dès qu'il essaye de se remuer. Passe son temps à sommeiller. La respiration est toujours irrégulière comme hier. La langue est humide et blanche. Pas de bourdonnements d'oreilles. Cœur dans le même état. La fièvre descend progressivement. Température: soir, 37°.

Selles régulières, grâce au calomel; sont molles, mais non liquides; moins fétides.

3.—Se sent toujours très faible. Douleurs lombaires. Un peu de céphalalgie. Le pouls est plein: 76. Langue un peu blanche. Bourdonnements d'oreilles, par intermittences. Mal aux cheveux. Douleurs articulaires. Troubles oculaires; a comme un nuage devant des yeux; distingue mal les couleurs: dans la journée il voit nettement le rouge, vert et blanc d'une rosace du plafond; mais le matin et le soir, les teintes se confondent. Un peu de photophobie.

Accuse des démangeaisons très vives sur toute la surface du corps. Il faut même qu'un infirmier le frictionne dans le dos.

Reste somnolent presque toute la journée; rêvasse sans suite.

Le cœur est normal. Rien au poumon. Douleur à la pression de la rate. Selles semi-liquides, jaunes; cinq selles dans la journée et deux dans la nuit. Urine beaucoup. Prend facilement: lait, bouillon, Porto, limonade.

4.—N'a plus de fièvre, mais pourtant est très agité; mouvements d'impatience, bras, jambes, tête sont sans cesse agités. Va à la selle, grâce au calomel.

Pas de céphalalgie, ni photophobie; distingue nettement les couleurs.

Les démangeaisons et le mal aux cheveux ont cessé. A dormi un peu.

5.—Température 36°.6. Ne souffre pas, se sent faible, agité; mouvements d'impatience continuels.

Langue blanche et humide. Pouls plein et régulier: 72. Respiration plus régulière, mais les intermittences se montrent de temps à autre. A mieux ses idées, et plus de précision dans ses réponses. Pas de douleur à la pression abdominale.

Inappétence, dégoût pour les aliments: lait, bouillon.

Peu altéré, mauvais goût dans la bouche.

Le temps est orageux, et l'après-midi est particulièrement agitée.

Ventre ballonné, coliques sèches. Un peu soulagé en allant à la selle.

6.—Pouls 88. Langue blanche, bouche amère, inappétence. Malaise qu'il ne peut définir et impatiences. Pas de météorisme. Légère douleur à la pression de la fosse iliaque droite. Cœur normal; le deuxième bruit pulmonaire a perdu son timbre éclatant.

Va toujours à la selle par purgatif. Ce matin des matières liquides étaient mêlées aux scybales. Quand il reste un jour sans aller à la selle, le malaise augmente; coliques, bouffées de chaleur, plus agité.

7.—Langue blanche et humide. Pouls fort: 76. Bouche mauvaise. Pas d'appétit.

9.—Somnolent. Souffre un peu des gencives (stomatite mercurielle par calomel dont il prend presque tous les jours 0.40). Langue blanche, enduit épais. A vomi hier et ce matin. Les vomissements sont surtout formés par du lait coagulé. Dégoût d'aliments. N'a envie que de fruits. On lui donne: pruneaux, compotes, œufs crus.

La face est calme. Inégalité pupillaire. Pouls 80, plein.

11.—Moins somnolent; figure moins abattue. Peu d'appétit. Langue encore blanche. Pupilles égales. Pouls 80.

Stomatite assez forte. Suppression du calomel. Gargarisme chloratés et 4 gr. de chlorate à l'intérieur.

13.—Il y a un mieux très manifeste. L'abattement est à peine marqué. Se lève un peu depuis deux jours. Pouls 72. Peu d'appétit. La stomatite a beaucoup rétrocédé.

Souffre de ballonnement de ventre. Nausées rares et cessent après l'ingestion de bicarbonate de soude. Pas de vomissement. Un peu de constipation. A pris hier un léger purgatif salin dont l'effet ne s'est produit que 24 heures après.

Commence aujourd'hui l'alimentation solide: viande de poulet et viande crue.

14.—Quand il a mangé, il accuse de la pesanteur dans l'estomac. La langue est belle, bouche moins amère. Pouls 74, calme et régulier. Dort mal. Est resté levé deux heures et est sorti 10 minutes. A été pris de frissons en rentrant; cependant il n'y a pas d'élévation de température.

17.—Se sent bien; a mangé 13 œufs hier, bouillon, lait et vin; la reprise de l'alimentation solide ne s'est pas accompagnée d'élévation de température. Il dort assez bien. Se lève une grande partie de la journée et n'en est pas trop fatigué. Pouls 72. Selles assez régulières.

Depuis le début de sa convalescence, il accuse des douleurs articulaires dans les doigts, poignets, jambes. Légère surdité. Faiblesse de jambes. Un peu de vertige. Reste debout six à sept heures. Peu d'appétit. Constipation légère. Urine, quantité normale. Pas de gêne du côté du cœur. Pas de palpitations.

Quitte l'hôpital le 25.

3 juin.—Depuis sa sortie de l'hôpital se sent toujours faible. Très peu d'appétit. Le teint est pâle, blafard, un peu comme celui des Brightiques. Pas d'albumine dans l'urine.

Se sent fatigué, surtout le matin au réveil. Douleurs dans les mollets et les reins. Dort assez bien.

Presque tous les matins il est réveillé vers 2 à 3 heures par des coliques sèches assez douloureuses. Fait peu. Constipation légère. Gaz sentant mauvais.

15.—Est très bien; la chute des cheveux commence.

Observation VI.

Frère Émilien (métis franco-japonais), né à Tientsin, âgé de 20 ans, de la Mission de Cha-la-eul.

Début le 13 mai par céphalalgie et un peu de fatigue. Quelques nausées. La fièvre ne commence que le 15 pendant la nuit.

16.—Au réveil, céphalalgie, vertige, bourdonnements d'oreilles, nausées. Il dort bien pendant la nuit.

17.—Entre à l'hôpital et prend aussitôt un purgatif. Céphalalgie. Bourdonnements. Température 39°.4; il prend 0.50 de quinine à midi et 0.25 à 1 heure. Surdité. Reste couché toute la journée et se plaint seulement de céphalalgie. Dort très mal. Transpiration abondante. Quelques filets de sang quand il se mouche.

18.—Stupeur légère. Surdité assez intense. Souffre de tête, reins, jambes (surtout de la gauche) et des articulations du coude. Épistaxis. Langue blanche, chargée. Pas de photophobie, pas d'injection oculaire. Peau moite. Pouls 128, petit et un peu dicrote.

Éruption commence à paraître: quelques taches sur poitrine, ventre et avant-bras.

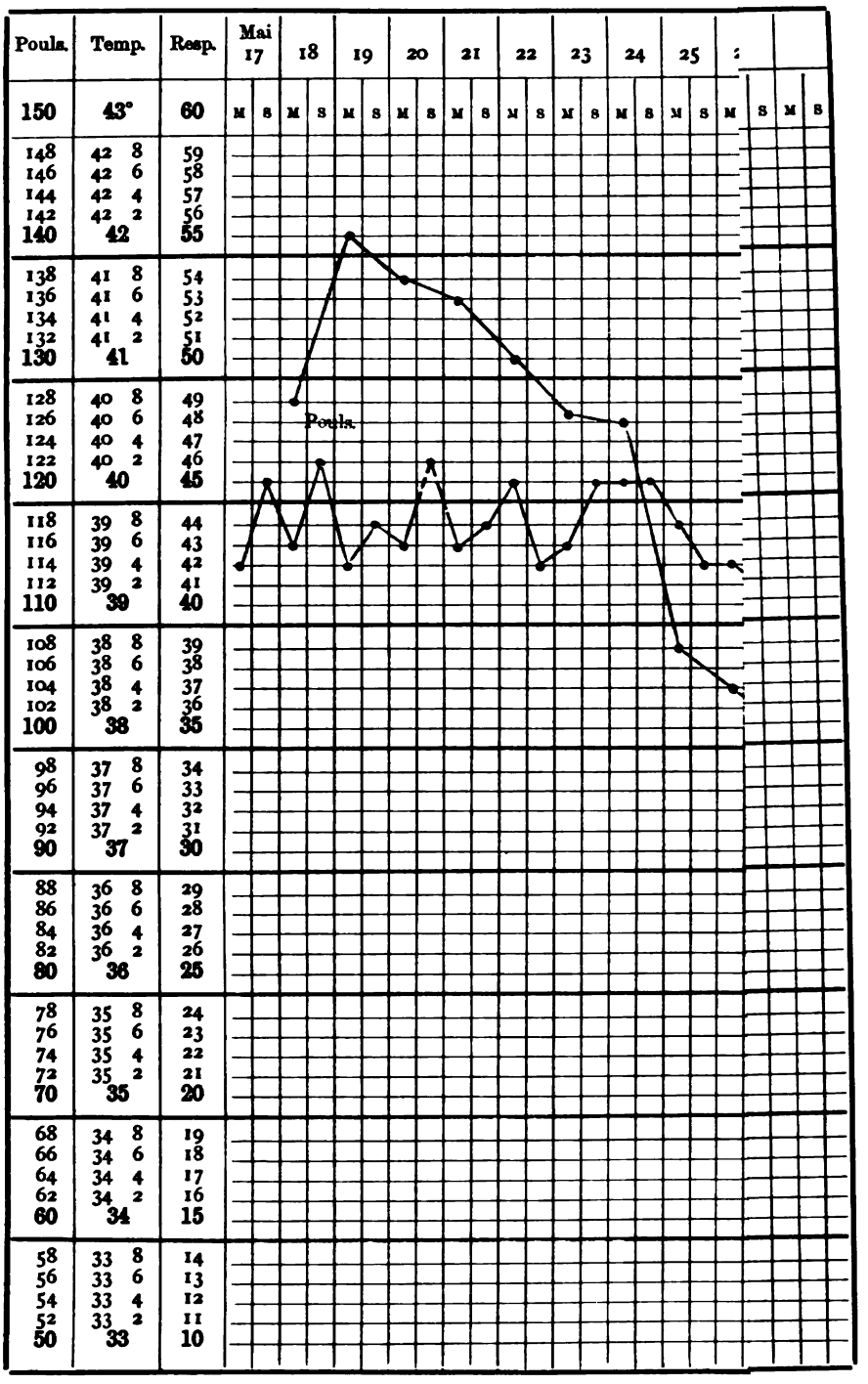
Rate un peu grosse, douloureuse à la percussion. Région hépatique sensible.

Cœur: bruits précipités. Diarrhée: claire comme de l'eau, jaune, fétide. Gorge rouge et luisante. Stomatite légère. Odeur fade et désagréable.

19.—Éruption peu apparente à cause du rash consécutif à la transpiration abondante. Céphalalgie. Surdité. Diarrhée. Pouls 140.

20.—Langue blanche et humide. Pas de céphalalgie, mais vertiges quand il se lève ou s'assied. Pas de photophobie. Surdité et bourdonnements d'oreilles.

Éruption: quelques taches dans la paume de la main. Quelques taches peu abondantes sur la poitrine, le ventre et avant-bras. Du reste la teinte de la peau est marron clair et de plus


Pouls. Temp. Resp.
Mai 17 18 19 20 21 22 23 24 25
M S M S M S M S M S M S M S M S M S M S S M S
150 43° 60
148 42 8 59
146 42 6 58
144 42 4 57
142 42 2 56
140 42 55
138 41 8 54
136 41 6 53
134 41 4 52
132 41 2 51
130 41 50
128 40 8 49
126 40 6 48
124 40 4 47
122 40 2 46
120 40 45
118 39 8 44
116 39 6 43
114 39 4 42
112 39 2 41
110 39 40
108 38 8 39
106 38 6 38
104 38 4 37
102 38 2 36
100 38 35
98 37 8 34
96 37 6 33
94 37 4 32
92 37 2 31
90 37 30
88 36 8 29
86 36 6 28
84 36 4 27
82 36 2 26
80 36 25
78 35 8 24
76 35 6 23
74 35 4 22
72 35 2 21
70 35 20
68 34 8 19
66 34 6 18
64 34 4 17
62 34 2 16
60 34 15
58 33 8 14
56 33 6 13
54 33 4 12
52 33 2 11
50 33 10
Pouls.

elle est chagrinée par une variole antérieure, ce qui rend l'éruption plus difficile à constater Pas d'éruption sur les jambes.

Rate et foie douloureux à la pression.

Cœur fœtal.

Gargouillements et borborygmes iliaques; quelques nausées; selles liquides, jaunes, pas très fétides, très fréquentes; tous les quarts d'heure pendant la nuit. Quelques tranchées (a pris 15 gr. de sulfate de soude). Épistaxis. Transpiration à odeur fade, écœurante. Rien au poumon. Souffre de la gorge. Gêne dans l'articulation des mots.

Urine très peu. Pas d'albumine; 16 gr. d'urée par litre.

Potion à l'extrait mou de quinquina, 0.30 digitale. Lavement froid phéniqué.

À midi, assez calme, malgré température à 40°.4. Aphasie transitoire, pendant trois à quatre heures. Les lavements phéniqués ne produisent pas de baisse de température; il y a même une légère exacerbation. Le premier lavement a été suivi d'une abondante débâcle de matières noirâtres à odeur extrêmement fétide. La sécrétion d'urine augmente. Dans la soirée, selles nombreuses, peu abondantes, absolument jaunes, liquides. Légère épistaxis.

Nuit assez calme. Dort. Transpiration abondante et fétide.

21.—Langue humide. Vertiges. Bourdonnements. Surdité. Peau moite. Peu de trouble dans la vue. Pouls petit et rapide: 136. Dyspnée: 44; respiration courte, précipitée et irrégulière. Température 39°.5. Lombalgie. Douleurs musculaires dans les bras et mollets.

Éruption n'a pas fait de progrès; quelques taches roses, violacées, très nettes sur poitrine et abdomen. Quelques-unes sur le dos et la paume des mains.

Palpation abdominale douloureuse. Gargouillements. Rate peu augmentée, mais douloureuse. Foie sensible, ne déborde pas les fausses côtes.

Cœur est toujours fœtal. Pas de bruits anormaux. Très légère congestion pulmonaire à droite et en arrière.

0.30 digitale, 1 gr. salol. Deux lavements phéniqués.

Après-midi calme. Souffre de la gorge. Crache et tousse. Ne dort pas très bien la nuit: délire, loquace. Coliques; selles assez nombreuses, jaunes et odorantes.

22.—Langue large, humide et blanche. Injection oculaire et photophobie légère. Pouls 132. Température 40°.

Tête lourde et vertiges quand il remue. Éruption stationnaire. Dyspnée: 48. Légère congestion base et arrière.

Douleur assez vive à la pression des deux hypochondres et du foie.

Les muscles abdominaux sont tendus et gênent l'exploration par le palper.

Quelques soubresauts tendineux et musculaires.

Cœur fœtal, bruit de galop à la base. Urine peu abondante, foncée en couleur.

Légère surdité et bourdonnements. Gorge un peu rouge.

Prend: lait, bouillon, jaunes d'œufs, salol et digitale.

Peau moite. Peut se mouvoir et s'asseoir seul.

23.—A transpiré toute la nuit dernière et la matinée jusqu'à midi. Douleurs gastriques (constriction). Tousse et crachats légèrement rouillés. Urine peu, 600 à 700 gr., rouge et

chargée. Transpiration très abondante. Il faut le changer deux fois. Température élevée toute la journée: 39°.6 et 40°.

Les lavements froids n'amènent pas une baisse de température, mais une diarrhée assez abondante. Cessation de la digitale.

24.—Peau brûlante et moite. Pouls plein, un peu dicrote: 126. Dyspnée: 48. Photophobie. Fuliginosités sur les lèvres; langue large et blanche. Figure rouge et chaude; oreilles froides.

Abattu. Surdité. Angine légère.

Éruption de moins en moins apparente; quelques taches sur le cou; plus rien sur des bras et avant-bras. Rate peu volumineuse, sensible à la pression; idem pour les hypochondres. Pas de parésie vésicale.

Selles jaune-clair, liquides; va surtout après les lavements et un peu de sulfate de soude, 12 à 15 gr. Gargouillements et borborygmes.

Douleurs au creux épigastrique dès qu'il a pris quelque chose. Cœur un peu fœtal. Légère congestion pulmonaire. Nuit agitée.

25.—Air très typhique; langue légèrement sèche; quelques fuliginosités sur les lèvres. Surdité. Céphalalgie légère. Nausées. Épistaxis. Peau sèche. Pouls 108. Urine très peu. Respiration douce, mais rapide: 44.

Quelques petites taches à teinte pétéchiale, s'effaçant en partie sous le doigt.

Palpation abdominale moins douloureuse; douloureuse surtout à droite maintenant. Plus d'éruption.

Sensation de brûlure au creux épigastrique: 4 gr. de bicarbonate de soude.

Trouble de la vue: nuage.

Cœur: souffle assez rude dans le quatrième espace intercostal gauche, commençant un peu après le premier bruit (péricardite?). Léger souffle aortique au premier bruit. Reprise de digitale.

Poumon: même état.

S'alimente assez bien: bouillon, lait, vin, deux jaunes d'œufs.

Vers midi, ténesme vésical, avec impérieux besoin d'aller. La retention dure jusqu'à 5 heures. À ce moment, il urine seul. Nuit très agitée. Crache beaucoup. Épistaxis légères; un peu de sang chaque fois qu'il se mouche.

26.—Journée passable; fait sous lui à plusieurs reprises (a pris 15 gr. de sulfate de soude). Abattu. Surdité considérable. La fièvre commence à tomber.

27.—A l'air moins abattu. Se sent mieux. Œil plus vif; légère photophobie. Surdité nécessitant de crier, et encore il n'entend pas ou très mal. Bourdonnements d'oreilles. Rougeur de pommette droite. Langue large, humide et un peu blanche. Pouls 100, plein. Peau chaude et un peu sèche.

Bruits du cœur bien frappés; frottement péricardique au premier temps, s'entendant surtout dans le quatrième espace.

Palpation abdominale très peu douloureuse. Rate semble très peu augmentée.

Selles fréquentes, liquides, jaunes. Urine bien.

Congestion pulmonaire plus marquée.

OBSERVATION VII.

Pouls.	Temp.	Resp.
150	43°	60
148	42 8	59
146	42 6	58
144	42 4	57
142	42 2	56
140	42	55
138	41 8	54
136	41 6	53
134	41 4	52
132	41 2	51
130	41	50
128	40 8	49
126	40 6	48
124	40 4	47
122	40 2	46
120	40	45
118	39 8	44
116	39 6	43
114	39 4	42
112	39 2	41
110	39	40
108	38 8	39
106	38 6	38
104	38 4	37
102	38 2	36
100	38	35
98	37 8	34
96	37 6	33
94	37 4	32
92	37 2	31
90	37	30
88	36 8	29
86	36 6	28
84	36 4	27
82	36 2	26
80	36	25
78	35 8	24
76	35 6	23
74	35 4	22
72	35 2	21
70	35	20
68	34 8	19
66	34 6	18
64	34 4	17
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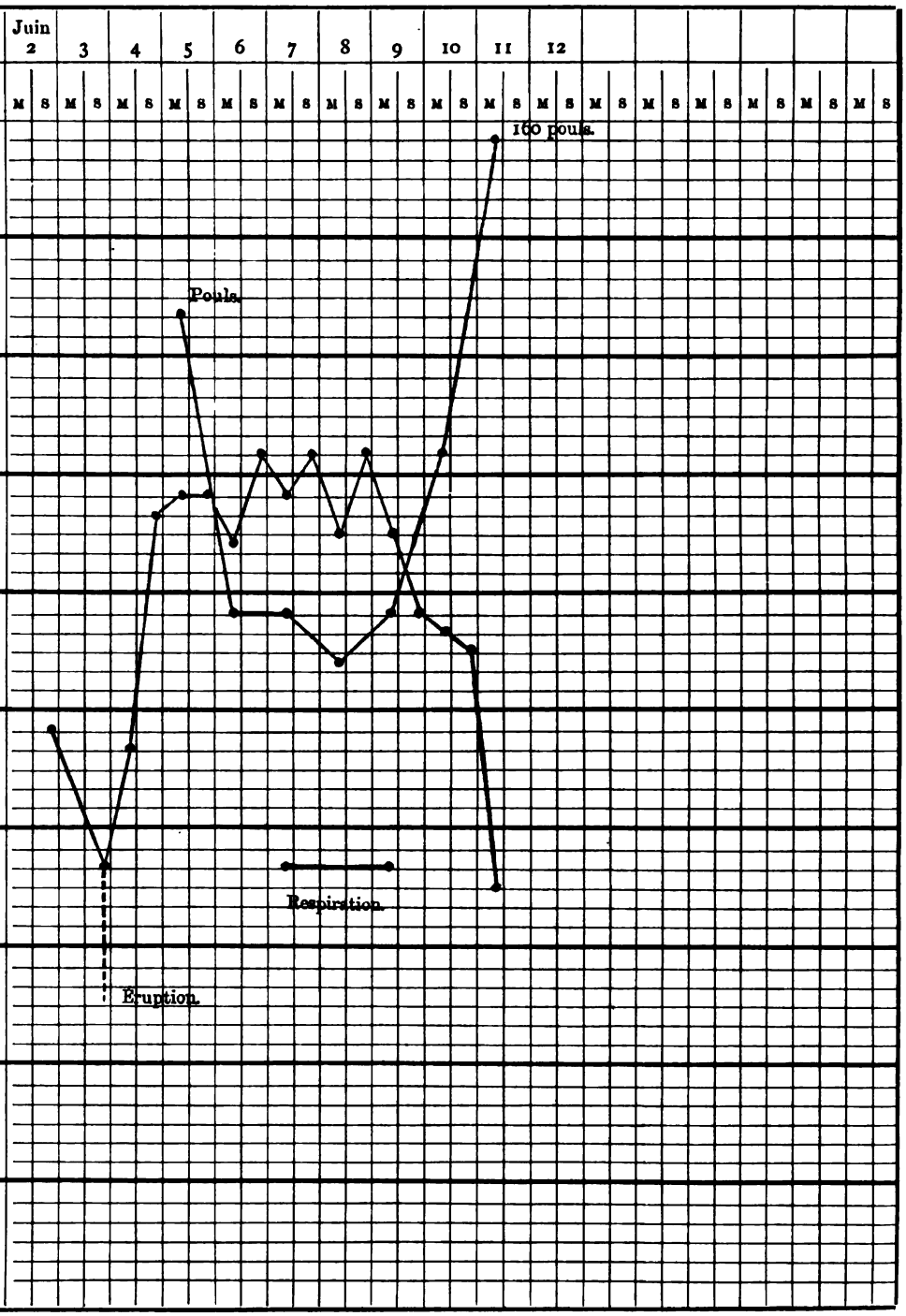
60	34	15
58	33 8	14
56	33 6	13
54	33 4	12
52	33 2	11
50	33	10



Après-midi bonne. Dort bien pendant la nuit.

28.—Calme; figure reposée. Peau fraîche; pouls plein: 84; cœur idem. Le frottement est moins sensible.

Palpation abdominale pas douloureuse. Léger météorisme; pas de gargouillement. Quantité d'urine augmentée. Suppression de digitale qu'il prend depuis trois jours.

Prend tous les deux jours 10 gr. de sulfate de soude.

Toute la nuit, transpiration abondante. Il a fallu le changer à plusieurs reprises. Les extrémités se sont refroidies vers 10½ heures; le pouls était tout petit. Aphasie transitoire.

29.—Ce matin il est très calme; figure reposée. Sa langue est belle. Pouls 84. Peau très moite; ne se plaint de rien. Surdité diminue. Cœur normal; plus de frottement.

30.—Bonne journée; constipation qui ne cède pas à 15 gr. de sulfate de soude. Bons effets d'un lavement.

31.—Très calme. Peau fraîche. Pouls 80. Langue large, rose et humide. Obnubilation de la vue. Légère surdité. Petites épistaxis. Commence l'alimentation solide: œufs durs, blanc de volaille, pain.

1er juin.—Ne souffre pas; se sent fatigué. Dort bien. Appétit qui le réveille; mange toutes les deux heures. Digère bien; un peu de constipation: pilules d'aloès et scammonée.

Vue encore trouble. Surdité persiste.

3.—Peau moite; se sent très bien; très appétit. Langue belle. Pouls petit et rapide: 108. Rien au cœur. Palper abdominal non douloureux. Urine beaucoup. Pas très altéré. Se lève depuis deux jours pendant deux heures.

25.—Cheveux commencent à tomber.

Observation VII.

Sœur Cécile, née à Montbrison (Loire), agée de 39 ans; en Chine depuis neuf ans, de la Mission de Cha-la-eul.

Début le 28 mai, par courbature, céphalalgie légère, abattement, pas d'appétit.

29.—Malaise continue. Transpire beaucoup la nuit et se trouve mieux la journée du 30.

31.—Beaucoup plus fatiguée. Se plaint de la tête. Langue chargée. Nuit agitée.

1er juin.—Ne se lève pas de la journée; très fatiguée. Prend dans la matinée un purgatif qui fait beaucoup d'effet et amène amélioration. Nuit assez bonne.

2.—Se lève un peu dans l'après-midi. Léger mouvement fébrile, 37°.8, le soir. Dort mal. Nuit agitée.

3.—Éruption commence à paraître sur la poitrine, le cou, les avant-bras, les dos des mains. Journée bonne; est gaie; veut même se lever. Température 36°.6. Nuit assez calme, interrompue par de brusques réveils et des cauchemars.

4.—La matinée est assez bonne. Se sent fatiguée; ne se plaint de rien. Elle parle assez volontiers, mais toujours de sujets particulièrement tristes. À partir de midi, elle devient triste. Elle parle encore un peu, mais ses idées sont noires. À partir de 5 heures, elle cesse complétement de parler, et reste les yeux fixes, indifférente à tout ce qui passe autour d'elle. On a beau

l'interroger, elle ne répond pas. La nuit a été mauvaise. Vers 1 heure du matin, la figure est tirée, les yeux vitrés, les dents crochetées; la respiration avait de longs arrêts. Le pouls était filiforme. Cet état semi-comateux cesse au jour. Mais elle ne parle pas.

5.—Je vois la malade à 7½ heures, assise sur son séant, soutenue par des oreillers; la figure est immobile, les yeux regardant vaguement au loin. Elle a l'air d'une lipémaniaque.

Elle reste indifférente aux questions qu'on lui pose, et ne semble même pas les entendre. Avant mon arrivée, elle a, à deux reprises, articulé quelques mots incompréhensibles de français mélangé de chinois. Les mains reposent sur le lit, croisées; ou bien, de temps à autre, elle tient un bout de son drap, dans l'attitude de la couture. La face est très congestionnée. Elle ne fait aucun geste, si ce n'est celui de ramener son drap, quand nous découvrons sa poitrine pour l'ausculter. Les lèvres, les dents et la langue sont fuligineuses. Température 39°.7. Pouls filiforme: 132. La peau est moite.

Quand nous découvrons la malade, nous constatons une éruption de taches, rose violacé, assez confluentes, occupant la poitrine et le cou. Sur le ventre, les taches, de dimensions plus considérables et régulières, ont une teinte rosée; elles disparaissent sous la pression. Le dos des mains et des bras est le siége d'une éruption assez abondante, de petites taches roses, punctiformes. Une à deux taches dans la paume des mains. Dans le dos, l'éruption est moins confluente. Rien sur les cuisses et les jambes, sur le dos et le cou de pied. Éruption punctiforme, en piqûres de puce, violacées, ne disparaissant pas sous le doigt. Veinosités très marquées.

Le cœur est bien frappé. Légère congestion pulmonaire. Rate et hypochondre peut-être un peu sensibles, car la malade fait un léger mouvement quand on presse très fort. Gargouillement à droite.

Deux lavements phéniqués. Acétate d'AzH^3 et extrait mou de quinquina, 0.30 de digitale. Elle ne garde que le premier lavement qui produit la transpiration et miction abondante. Impossible de lui faire prendre l'acétate d'AzH^3. Prend un peu de digitale dans du café.

Elle reste dans un état de stupeur complète jusqu'à 4 heures. Vers 5 heures, elle commence à prononcer quelques mots vagues et quasi-délirants. À 6 heures, ses idées sont plus lucides et elle parle. La première partie de la nuit est calme; deuxième partie, jusqu'à 6 heures du matin, très agitée.

Selles très fréquentes, horriblement fétides, précédées de coliques très violentes. Ce sont plutôt des coliques sèches, siégeant surtout à droite et que calment un peu les évacuations. La défécation n'est pas douloureuse.

Pas de nausées, pas de vomissement. Apparition des règles.

6.—Ce matin elle est calme, répond bien à mes questions, mais ne se souvient de rien de ce qui s'est passé hier; ne se rappelle pas m'avoir vu. La figure est stupide, les pommettes très rouges, lèvres et dents fuligineuses, langue sèche et accolée contre le palais. Très altérée. La voix est faible et parler la fatigue vite. Peau moite; pouls petit: 108. Respiration calme: 28.

Éruption moins marquée; a diminué de teinte; les taches sont plus pâles; rose violacé, disparaissant sous la pression du doigt. Celles du cou sont à peine visibles; idem sur bras et dos. À la naissance de la nuque, sorte de rash rouge-violacé, large comme la main. Sur le dos du pied, les veinosités ont disparu. Il reste encore un piqueté ecchymotique très léger, ne

disparaissant pas sous la pression. Palpation abdominale douloureuse, à droite surtout: peu sur la rate. Pression des mollets très douloureuse. Rate ne paraît pas augmentée. Cœur normal. Légère congestion pulmonaire. Parésie vésicale.

Urine rouge, dense et chargée: 13½ gr. d'urée par litre. Traces d'albumine.

7.—Lourdeur et céphalalgie. Douleurs dans les mollets: crampes et fourmillements. Douleurs dans les bras, reins, au moment où la fièvre s'allume.

Lavement phéniqué, suivi d'une débâcle abondante, noire, fétide.

La fièvre s'allume vers midi et demi ou 1 heure; il y a quelquefois des frissons avec claquements de dents.

8.—Figure assez calme, congestion des pommettes; figure chaude, oreilles froides. Lèvres, dents, langue sont fuligineuses. Pouls assez plein: 104. Éruption a disparu sur la poitrine; quelques taches rosées restent sur le ventre; plus d'éruption dans le dos; disparition du rash de la nuque.

Cœur: premier bruit bien marqué; premier bruit pulmonaire un peu râpeux. Dédoublement du deuxième bruit très intermittent.

Palpation de l'abdomen douloureuse, surtout à droite; gargouillements.

Rate sensible à la pression, ne paraît pas augmentée de volume.

Pas de météorisme. Légère congestion à droite et arrière. Urine très peu.

Après-midi assez bonne; prend toutes les heures: lait, bouillon, champagne.

Délire tranquille à idées très variables; nuit agitée. Transpire peu. Urine très fréquemment; peu d'urine à chaque miction.

9.—Matinée assez calme jusqu'à 8 heures. À ce moment, après un mouvement d'agitation, elle tombe dans un état de torpeur très profonde; fait sous elle, par les deux bouts. Des glaires lui sortent incessamment de la bouche; les yeux se vitrent, le pouls faiblit.

Je la vois à 5½ heures: figure légèrement congestionnée; yeux fermés, immobilité du sommeil. Respiration assez calme: 28. Pouls assez plein: 108. Répond assez bien aux questions. Pas de douleurs localisées, mais abattement et faiblesse générale. Photophobie légère. Bourdonnements d'oreilles, légère surdité.

Gorge sèche, langue collée par les mucosités, gêne de l'articulation. Langue noire au milieu, humide sur les bords.

Cœur dans le même état. Urine claire et abondante.

Quand on essaye de lui faire prendre quelque chose (champagne), elle absorbe deux à trois cuillerées, qu'elle rend ensuite par regurgitation. Elle dit qu'il lui semble qu'elles s'arrêtent dans la gorge. Probablement: spasme de l'œsophage.

Une piqûre d'éther et de caféine.

La fin de la journée est assez bonne. Elle repose la première partie de la nuit. À partir de 2 heures, délire, veut se lever et partir. N'a pas transpiré pendant la nuit. Urine peu et très chargée. Carphologie.

10.—Vers 7 heures du matin, elle est très agitée. À 8 heures, elle tombe en prostration qui fait des progrès rapides. Extrémités commencent à se refroidir et se cyanoser. Température 38°.6.

À 9½ heures, quand je la vois, elle est stupide, les mains inertes ou prenant de temps à autre son drap comme pour coudre. Elle ne répond pas aux questions qu'elle entend toutefois; ou bien, elle ne répond que par monosyllabes. Il faut une excitation violente faite par la voix, ou une piqûre de caféine, pour la tirer momentanément de sa torpeur.

Les mains ne sont plus froides, mais les pieds le sont encore.

Langue large, humide, noire en son milieu. Respiration calme. Pouls 120, petit. Semble ne souffrir de rien. Un peu de photophobie, mais pas la moindre injection oculaire. Ne peut rien avaler. Prescription d'un lavement nutritif, avec jaune d'œuf et bouillon.

Elle reste dans cette torpeur durant toute l'après-midi. Vers 7 heures, les extrémités commencent à se refroidir. Pendant la nuit, dyspnée, râle, cyanose et refroidissement des extrémités. Ne peut rien absorber.

11.—À 7½ heures, cyanose des extrémités; refroidissement et anesthésie. Yeux creux et vitrés; ne répond plus aux questions. Transpiration froide, visqueuse et très abondante. Température 36°.5. Incontinence d'urine.

Soubresauts tendineux, carphologie.

Pouls filiforme: 160; inutilité des piqûres d'éther et de caféine.

Meurt à 9½ heures.

Observation VIII.*

Tchang, fumeur d'opium, 24 ans, charretier, originaire du Chansi, se présente le 1er mai à ma consultation de la Légation, se plaignant de fièvre, courbature, malaise général depuis cinq jours. La température est 40°.4. La langue est sèche, rouge; et il porte sur la poitrine et l'abdomen une éruption assez confluente de taches rosées. Envoyé à l'hôpital, où on lui donne 0.60 de calomel.

2.—Il prétend s'être refroidi il y a six jours, et depuis ce moment, le malaise, fièvre, céphalalgie, photophobie ont fait des progrès. Il ne donne que des renseignements vagues, et ne peut préciser la date d'apparition de l'éruption.

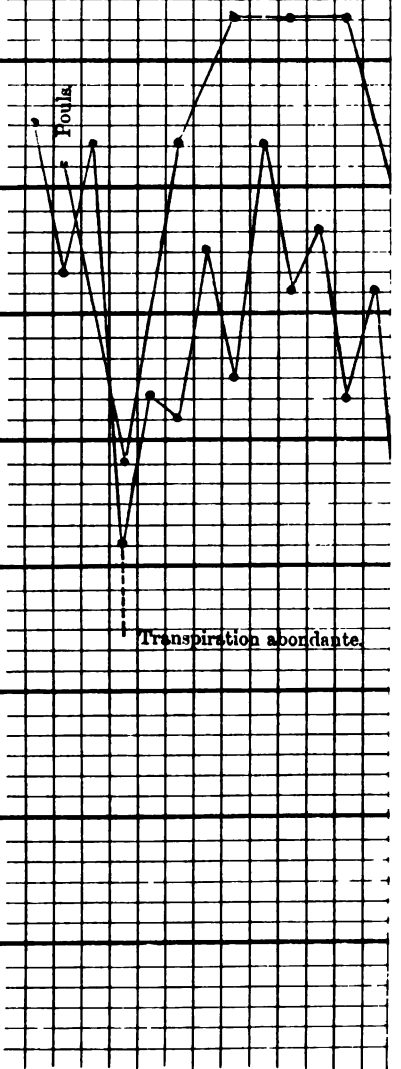
Ce matin il se plaint de céphalalgie, photophobie, lombalgie; douleurs dans les jambes. La langue est blanche et sèche. Les lèvres sont sèches et un peu fuligineuses. Pouls 120. Température 39°.8. Rien au cœur. Foie un peu douloureux, non augmenté. Pression abdominale douloureuse à droite et surtout à gauche. Pression sur la rate douloureuse; diamètre: 12 × 10 cm. Éruption: ventre, thorax, quelques-unes dans la paume des mains et avant-bras. Elle est moins marquée qu'hier. Quelques taches à la face interne des cuisses. Celles de l'abdomen sont très confluentes; elles sont un peu pâles maintenant, mais rappellent tout à fait comme aspect et dimensions les taches rosées. Éruption très confluente dans le dos; en avant, comme en arrière, ne dépasse pas la naissance du cou. Éruption à la face postérieure du bras.

La tête est très chaude et les oreilles froides.

Ronchus et sibilances dans toute la poitrine, en avant comme en arrière. Malgré le thermomètre à 40°, il marche seul pour aller à selle. Transpiration très abondante dans l'après-midi.

* Bien que ce travail ait surtout en vue le "Typhus des Européens," nous avons cru bon d'intercaler, ici, l'observation d'un malade chinois.

Pouls.	Temp.	Resp.	Mai 1		2		3		4		5		6		7	
150	43°	60	M	S	M	S	M	S	M	S	M	S	M	S	M	S
148	42 8	59														
146	42 6	58														
144	42 4	57														
142	42 2	56														
140	42	55														
138	41 8	54														
136	41 6	53														
134	41 4	52														
132	41 2	51														
130	41	50														
128	40 8	49														
126	40 6	48														
124	40 4	47														
122	40 2	46														
120	40	45														
118	39 8	44														
116	39 6	43														
114	39 4	42														
112	39 2	41														
110	39	40														
108	38 8	39														
106	38 6	38														
104	38 4	37														
102	38 2	36														
100	38	35														
98	37 8	34														
96	37 6	33														
94	37 4	32														
92	37 2	31														
90	37	30														
88	36 8	29														
86	36 6	28														
84	36 4	27														
82	36 2	26														
80	36	25														
78	35 8	24														
76	35 6	23														
74	35 4	22														
72	35 2	21														
70	35	20														
68	34 8	19														
66	34 6	18														
64	34 4	17														
62	34 2	16														
60	34	15														
58	33 8	14														
56	33 6	13														
54	33 4	12														
52	33 2	11														
50	33	10														



3.—Se sent mieux ce matin. La transpiration très abondante dans la soirée et la nuit amène une baisse de température. Température 37°. Pouls 98. Deux selles diarrhéiques hier; deux ce matin, par calomel.

Vertiges quand il se lève ou s'assied. Troubles de la vue, brouillards. Bourdonnements d'oreilles, un peu de surdité. Pas de douleurs lombaires.

La langue est un peu sèche. Rien au cœur. Congestion pulmonaire, à gauche surtout. Tousse: crachats blanchâtres. Ronchus des grosses bronches.

L'éruption a notablement diminué; sa coloration est moins foncée. Dans le dos elle est presque totalement effacée. Sur le ventre, les épaules, elle est marquée par un piqueté moins rose.

Pression de la rate très douloureuse.

Urine très peu, pas d'albumine.

Dans l'après-midi, bien que température ne soit pas très élevée (38°.2), il se plaint de chaleur; la figure est congestionnée.

4.—La journée est bonne. Température: matin, 38°; soir, 39°.4.

5.—Ce matin la tête est lourde: photophobie, conjonctives injectées, œil luisant; un peu de surdité, léger bourdonnements d'oreilles. Très altéré. Pouls rapide et dicrote: 132. A transpiré dans la nuit et la matinée. L'éruption a disparu sur beaucoup de points du thorax et abdomen, mais par places (autour du mamelon, parois latérales) elle a une teinte un peu violacée, et quelques taches présentent même un petit centre ecchymotique ne disparaissant pas sous la pression du doigt. La respiration est assez calme: 28, un peu irrégulière parfois. Un peu de dyspnée quand il se lève pour aller à la selle. A les crachats un peu gommeux et rouillés: stomatite mercurielle qui débute. Un peu de douleur à la pression sur le foie. La rate est grosse, douloureuse et déborde de 3 à 4 cm. les fausses côtes. Agité dans l'après-midi. Température 40°.2. Bourdonnements d'oreilles. Vertiges. Ni vomissement ni nausées. Deux selles dans l'après-midi, et une dans la nuit. Dort assez bien. Figure congestionnée et brûlante; oreilles froides.

6.—Langue rouge, humide. Pas de photophobie; œil brillant, très injecté, écoulement muco-purulent dans l'angle interne. Quelques fuliginosités sur les lèvres.

L'éruption est à peu près comme hier, sauf sur la poitrine où elle a encore diminué. La teinte pétéchiale des taches siégeant autour du sein est moins violacée. Les taches punctiformes, rouge-violet de la face interne du bras et du pli du coude disparaissent sous la pression.

Cœur fœtal. Surdité, bourdonnements d'oreilles, vertiges, quand il se lève. Rate volumineuse et douloureuse à la pression; idem pour foie. Ronchus disséminés dans la poitrine. Crachats blancs aérés. Gorge très rouge. Très altéré. Pas d'albumine.

7.—Œil très injecté; muco-pus. Pouls plein: 132. Rien au cœur.

Langue rouge et sèche, râpeuse par desquamation épithéliale.

Pas de céphalalgie. Lombalgie. Photophobie.

Tousse, et les secousses de la toux le fatiguent.

Éruption devient de plus en plus pétéchiale: piqûres de puces.

Rate volumineuse, douloureuse à la pression. Douleurs musculaires. Urine peu. Très altéré. 0.50 de digitale.

8.—Se sent mieux; mais le visage reste en stupeur, immobilité des traits; indifférence à tout ce qui se passe.

9.—Langue rouge, écarlate dans le bout, plus blanche en son milieu. Lèvres un peu fuligineuses. Œil à peine injecté; pas de photophobie. Peu de surdité, pas de bourdonnements. Pouls 120.

Éruption: il ne reste que quelques taches violacées, ne disparaissant pas complétement sous la pression. Sudamina nombreuses sur la poitrine; a transpiré toute la nuit et dans la matinée; odeur infecte, analogue à celle de son haleine.

Se plaint de courbature. Selles diarrhéiques (calomel).

Rate toujours douloureuse. Foie normal, non douloureux.

Crache beaucoup: crachats rouillés et gommeux (stomatite mercurielle).

11.—Transpiration abondante la nuit et matinée. Thermomètre descend à 35°.4 (bouche et aisselle). Pouls petit, dicrote: 94. Langue rouge, humide, un peu tremblante. Quelques bourdonnements d'oreilles et légère surdité.

Va bien du ventre, selles liquides noires (comme toutes celles des fumeurs d'opium). A souffert tous ces jours derniers de manque d'opium; il faut lui donner par jour 0.10 de morphine par l'estomac.

Éruption a totalement disparu de poitrine et abdomen. Sudamina nombreuses.

Cœur: bruits sourds, mais normaux.

Respiration soufflante, submatité à gauche et arrière; congestion pulmonaire.

12.—Reste en stupeur toute la journée. Yeux très injectés. Transpire beaucoup. Sudamina abondantes sur la face.

13.—Reste constamment plié dans ses couvertures. Odeur infecte. Langue belle. Gingivite mercurielle douloureuse.

Un peu de lourdeur de tête. Légère surdité. Tousse un peu et crache.

Œil non injecté. Pouls plein et régulier: 80.

Sudamina nombreuses sur le thorax et surtout abdomen.

Rien au cœur.

Rate diminuée de volume, moins douloureuse à la pression. Ventre souple, selles régulières.

A commencé à manger un peu de riz.

15.—Se sent bien et se lève. Souffre de sa stomatite. Palpation et pression abdominales non douloureuses. Rate revenue à la normale; on ne la sent plus déborder les fausses côtes. Cœur normal. Pouls 76. (Traitement au début: calomel, acide salicylique (pas d'effet); lui-même prenait alimentation très légère et buvait de l'eau chaude.)

25.—Parfaitement guéri. Se sent seulement un peu de faiblesse dans les jambes. Quelques vertiges, surtout quand il passe brusquement de la position horizontale à la verticale. Quelques brouillards devant les yeux. Légère sensibilité de la rate à la pression; celle-ci a repris ses dimensions primitives.

M	S	M	S	M	S	M	S	M	S	M	S	M	S	M	S	M	S

OBSERVATION IX.

Sœur ANGÈLE, 24 ans, née à Hongkong. Sa famille, depuis plusieurs générations, habite la Chine. Santé assez délicate. Est à Pékin depuis six mois.

Début le 19 octobre, à 3 heures du matin. Elle se réveille avec la fièvre, frissons, chaleur, sueurs, et un très violent mal de tête. Dans la journée elle se plaint de céphalalgie, de courbature, d'inappétence, d'état fébrile. Elle dort assez bien.

20.—Prend le matin de l'huile de ricin. Cinq selles diarrhéiques. Souffre de la tête toute la journée, spécialement le matin, vers 11 heures; puis dans l'après-midi céphalalgie gravative et lancinante. Nuit pas très bonne.

21.—Se lève à 11½ heures. Figure un peu rouge; œil brillant; air un peu abattu. Les yeux étaient vers 7 heures assez injectés, ne le sont pas maintenant. Pas de bourdonnements d'oreilles. Elle souffre beaucoup de la tête. Céphalalgie en casque et gravative. Un peu de photophobie. Douleurs musculaires dans les mollets et les reins. Sensation de chaleur rétro-sternale. La langue humide est recouverte d'un épais enduit blanc jaunâtre. Inappétence; soif assez vive.

Quelques coliques; n'est pas allée à selle depuis deux jours. Palpation abdominale négative.

Elle tousse un peu. Rien au poumon. Deuxième bruit de l'artère pulmonaire un peu éclatant. Pouls 112.

Peau légèrement moite.

Émeto-cathartique. 0.75 acide salicylique, lait et bouillon.

Le purgatif produit beaucoup d'effet, mais elle souffre de la tête toute l'après-midi. Nuit assez bonne.

22.—À 9½ heures du matin, la figure est très congestionnée. Pouls plein: 120. La langue commence à se sécher. La pression sur la rate et le foie est douloureuse.

Cœur: premier bruit pulmonaire légèrement soufflant.

Photophobie. Peu de bourdonnements. Céphalalgie, surtout à partir de 11 heures du matin, lancinante, exagérée par le moindre mouvement. A un besoin violent de sommeil.

23.—Journée bonne. À 6 heures du soir, commence à être agitée, inquiète. Céphalalgie. S'assoupit et rêvasse. Dort seulement la moitié de la nuit. Selles diarrhéiques jaunâtres, odeur très fétide.

Urine très peu, pas d'albumine. Pas de transpiration; peau sèche.

24.—A eu la fièvre toute la nuit dernière, jusqu'à 6 heures du matin. N'a pas l'air très abattue. Répond bien. Œil très peu injecté; photophobie insignifiante. Bourdonnements d'oreilles. Quelques filets sanguinolents quand elle se mouche. Langue chargée, un peu sèche. Gorge amère, brûlante et sèche. Pas de fuliginosités. Très altérée.

Pouls 136. Cœur légèrement fœtal, pas de bruits anormaux.

Congestion pulmonaire légère.

Souffre de la tête, surtout la nuit et à la suite de mouvements. Les douleurs musculaires des jambes et des cuisses sont un peu moins fortes.

La pression dans les gouttières vertébrales est très pénible. Il en est de même pour la pression des muscles de la poitrine, surtout au niveau du sein gauche.

La rate, légèrement augmentée de volume, est très sensible à la pression.

Éruption: quelques taches très rares sur la poitrine; deux dans le dos; pas sur les bras; une dans chacune des paumes de la main. Température 39°.

25.—Journée pas trop mauvaise. Un peu agitée; selles nombreuses (a pris 0.20 de calomel). Pas d'épistaxis. Température: matin, 38°.8; soir, 39°.

26.—Souffre de la tête, des muscles, des articulations. Peut s'asseoir seule, mais ces mouvements exagèrent la céphalalgie. Photophobie. Bourdonnements.

La langue est sèche, quelques fuliginosités sur les lèvres. Pouls 128. Au cœur, un bruit de galop, à la base.

Poumon: congestion des deux bases.

L'éruption n'a fait aucun progrès. Température 39°.4.

27.—Journée bonne; s'alimente. Épistaxis légère. Température 40°.

28.—Souffre moins de la tête, sensation de vacuité. Hyperesthésie cutanée et musculaire. Liberté du ventre. Pouls 120, plein. Cœur bon, persistance du bruit de galop.

Congestion pulmonaire; tousse beaucoup, et crache un peu.

Pression sur la rate moins douloureuse. Photophobie atténuée.

Bourdonnements d'oreilles. Pas d'épistaxis. Pas d'albumine.

Vers 11 heures, la face se congestionne tous les jours; les deux pommettes deviennent très rouges. Il se fait comme une espèce de relief écarlate, limité par un liséré un peu plus foncé, rappelant l'érysipèle. L'éruption offre quelques taches nouvelles sur la poitrine.

Suppression de digitale; 0.03 d'extrait thébaïque pour la nuit.

29.—Journée bonne. A bien dormi. Température: soir (39°), moins élevée que celle du matin (39°.6), ce qui semble faire prévoir la défervescence.

30.—Température: matin, 38°. Calme. Se sent mieux. Pouls 112, plein. Tousse beaucoup. Langue moins sèche. Liberté du ventre facilement entretenue par calomel. S'alimente bien. Température: soir, 39°.4. Souffre moins de la tête. Photophobie plus forte.

31.—Amélioration notable; toute la journée, température reste à 38°. Tousse moins. S'alimente. Dort beaucoup.

1er janvier 1896.—Température: matin, 36°. Peau moite; se sent de mieux en mieux. Selles régulières. Dort et s'alimente. A vomi un peu dans la soirée.

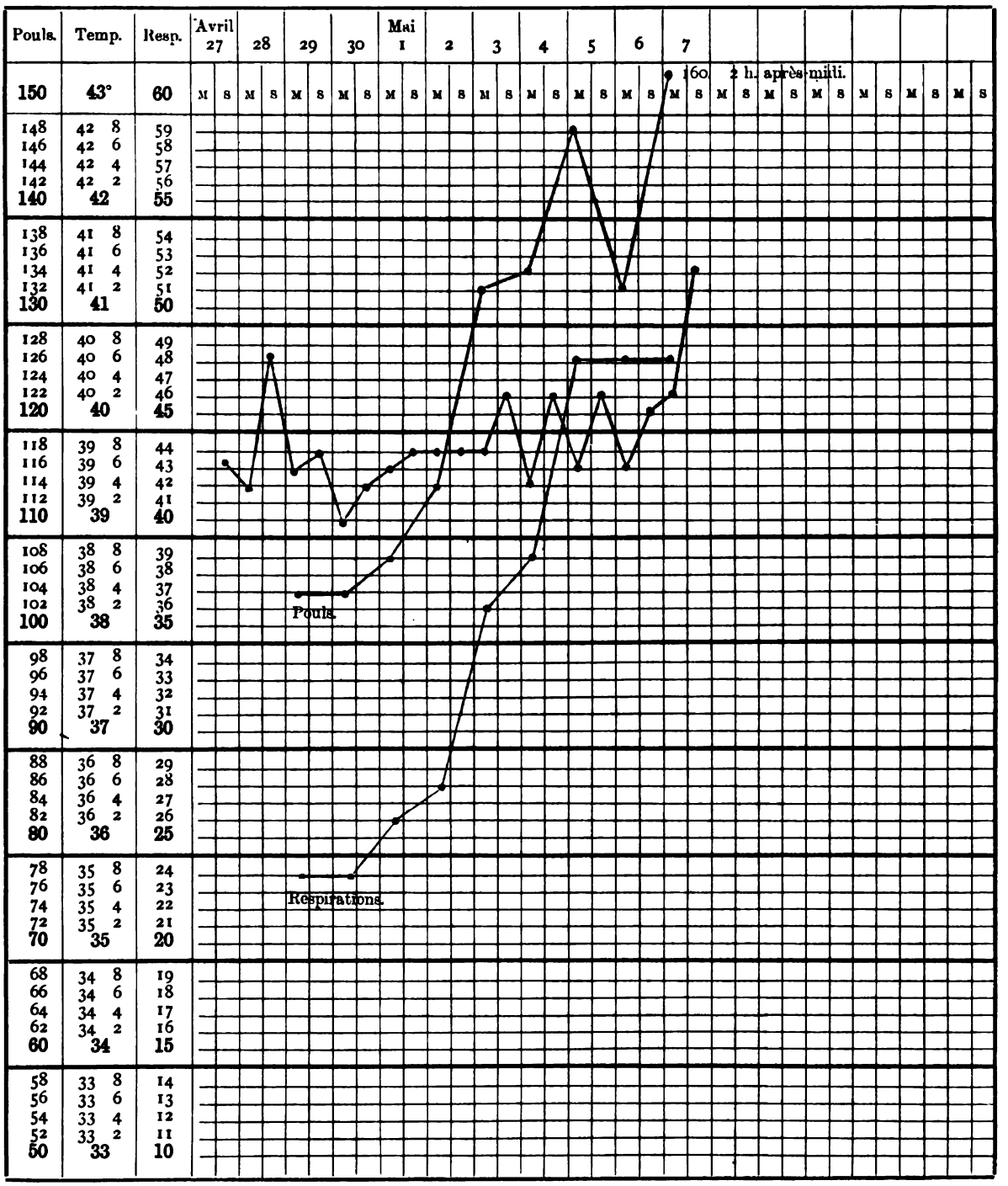
2.—Les selles sont bien liées. Bourdonnements d'oreilles persistent. Commence à être sourde. Pouls 68, plein et bien frappé. Cœur tout à fait normal.

3.—Alimentation solide commencée aujourd'hui. Pression sur la rate encore douloureuse. Température très basse: 35°.4.

5.—La température reste basse: 35°.4. Se sent bien, très appétit. A encore des bourdonnements d'oreilles; ne souffre ni de la tête, ni de photophobie. Selles régulières, moulées. Toujours impérieux besoin de sommeil. Pouls petit et lent: 64. Langue un peu chargée et noirâtre dans sa partie postérieure. Se lève quelques instants dans l'après-midi, mais se sent faible.

8.—Température reste basse: 35°.6. Pouls bien frappé: 64. La peau des mains est très sèche, rugueuse. La malade accuse des douleurs dans les articulations des mains et plus

OBSERVATION X.



spécialement dans les articulations métacarpophalangiennes. Douleurs aux pieds sont moins vives, si ce n'est au cou du pied.

10.—Persistance des douleurs des articulations des mains et des pieds. La peau des mains desquame par petites pellicules, dont quelques-unes ont un demi-centimètre carré. À la paume des mains, la desquamation a le caractère furfuracé ou pytiriasiforme, rappelant la desquamation de la rougeole. La peau des bras et des jambes, celle des pieds desquament très légèrement.

Température: matin, 36°.2; soir, 36°.5. Pouls 64, bien marqué. Dort bien. Très bon appétit. Les bourdonnements d'oreilles ont à peu près complétement disparu. Reste levée deux ou trois heures.

12.—Température 36°.5. Se sent moins fatiguée après être resté levée. La desquamation porte surtout sur les mains et les pieds. Quand elle se lave les mains, elle entraîne en s'essuyant de grandes quantités de pellicules qui forment un magma blanchâtre. Aux bras, la peau est sèche, et par grattage on en détache une desquamation pytiriasiforme. Rien au corps ni à la figure.

15.—Se sent très bien. Reste levée toute l'après-midi. Température 37°. Mange avec appétit.

Observation X.*

Frère Élie-François, 35 ans. A eu la rougeole dans son enfance; une bronchite à 20 ans; a souffert de palpitation de cœur à 18, 22 et 28 ans; variole légère à 26 ans. En Chine depuis trois ans, de la Mission de Cha-la-eul. Depuis un an, il se sent faible: abattement, céphalalgie fréquente, peu d'appétit.

Le 27 avril 1896 il commence à se sentir fatigué, céphalalgie, mouvement fébrile. Il peut, toutefois, aller faire une assez longue promenade dans l'après-midi; mais en rentrant, température 39°.7. Prend, en se couchant, une potion pour transpirer. Nuit agitée; sommeille mal.

28.—Purgatif salin, dans la matinée, qui fait beaucoup d'effet. À 8 heures, température 39°.4. Souffre de la tête, reins, jambes, bras; courbature générale. Vomit un peu.

Je le vois, dans l'après-midi, à Cha-la-eul. Abattu; souffre de la tête. Température 40°.6. Il se sent, toutefois, assez de force pour se rendre, en charrette, à l'hôpital, où il arrive à 6 heures. À ce moment, température 39°.7. Nuit agitée. Céphalalgie continue. Courbature augmente.

29.—Se sent très abattu. Céphalalgie, comme hier. Souffre de la gorge et tousse: expectoration jaunâtre, assez abondante. Pas de bourdonnements d'oreilles, pas d'épistaxis. Douleurs intra et circum-orbitaires; pas de photophobie. Pouls 104. Respirations 24.

Langue large, humide, un peu blanche. Peau moite. Palpation du foie, de la rate, est indolore. Léger gargouillement iliaque droit et gauche. N'est pas allé à selle depuis hier.

Bruits du cœur bien frappés. À l'artère pulmonaire: léger dédoublement et souffle un peu râpeux au premier bruit.

Gorge un peu rouge. Percussion et auscultation du poumon sont normales.

Prend 0.20 de calomel, à 1 heure. Selles nombreuses.

* Cette observation a été prise, à Cha-la-eul, un an après celles qui sont rapportées plus haut. Ce fut, dans l'année 1896, le seul cas de typhus observé sur des Européens.

Dans l'après-midi, la lombalgie augmente. Nuit pas très bonne; sommeil interrompu.

30.—À 8 heures du matin, la langue est large, blanche, humide. Céphalalgie augmente de violence: lancinante, surtout au sommet de la tête. Légère injection conjonctivale. Douleur de la gorge, comme hier.

Pouls 104. Respirations 24. Rate et foie non douloureux. Léger gargouillement à droite. Pas de douleur à la pression. Premier bruit de l'artère pulmonaire moins soufflant, mais le dédoublement est mieux marqué.

Pas d'albumine dans l'urine.

Dans l'après-midi et la première partie de la nuit, il est très agité. Céphalalgie très violente.

Quelques taches roses se montrent dans l'après-midi.

1er mai.—Tête brûlante, céphalalgie très forte. Injection oculaire plus marquée. Douleurs intra-orbitaires. Pas de bourdonnements d'oreilles; pas d'épistaxis. Langue large et blanche, un peu sèche. Bouche mauvaise; peu altéré. Courbature dans le même état qu'hier; souffre moins des reins et des mollets. Pouls 108. Respirations 21.

L'éruption, qui a commencé hier au soir, est encore peu abondante. Elle se voit surtout aux avant-bras et sur le dos de la main gauche; peu à droite; quelques taches sur la poitrine et le ventre. Leur teinte est rose-violacé. Pas de démangeaison.

Palpation abdominale non douloureuse. Rate non douloureuse. Cœur dans le même état; dédoublement pulmonaire plus net. Rien au poumon. A encore assez de force pour aller seul à la selle.

Après-midi agitée. Violente céphalalgie, surtout au sommet. Deux légères affusions froides à 4 heures et à 8 heures.

2.—A l'air fatigué; photophobie légère; se sent plus abattu, mais peut aller seul à la selle. A pris 15 gr. de sulfate de soude; selles nombreuses, diarrhéiques, noirâtres, ne sentant pas trop mauvais. Céphalalgie violente, lancinante, nécessitant la calotte de glace; hyperesthésie du cuir chevelu; la moindre traction sur les cheveux est douloureuse.

Pouls petit: 120. Respirations 128. Langue plus sèche. Surdité et trouble de la vue commencent. L'éruption s'est surtout développée aux flancs et au dos. Le cœur commence a avoir le caractère fœtal. Pression sur la rate un peu douloureuse. Foie non augmenté. Pas de gargouillement; pas de douleur à la pression des hypochondres.

Un peu d'albumine. Prend un bain à 10½ heures; se trouve momentanément affaibli et très oppressé. Mais une demie-heure après, éprouve un bien-être manifeste.

Nuit pénible à cause de la céphalalgie. Hallucinations: voit plusieurs personnes dans son lit.

3.—Abattu; céphalalgie lancinante et à accès. Dyspnée: respirations 36. Pouls 132. Cœur fœtal et faible. Peau chaude et sèche. Langue encore un peu humide. Éruption sur avant-bras peu marquée; mieux dessinée sur la poitrine. Au ventre et aux flancs, elle est légèrement violacée et ne disparaît qu'incomplétement sous la pression.

Assez altéré. Se sent plus abattu; le moindre mouvement lui est très pénible.

Bourdonnements d'oreilles; surdité plus marquée. Yeux injectés. Rien au poumon. 20 gouttes de teinture de digitale.

À 2 heures, température 40°.2. Un bain froid. Il éprouve un mieux être jusqu'à 6 heures. À ce moment il commence à être agité. Dort très mal.

4.—L'œil est un peu mort et injecté. Se sent plus abattu. Ne peut aller seul à selle. Surdité a fait des progrès. Vue trouble. Souffre moins de la tête. Ses idées sont vagues. La langue est sèche, surtout sur les bords. Température 39°.4. Cœur fœtal, mais assez fort. Pouls 136. Dyspnée: respirations 40. Légère congestion pulmonaire.

Peau moite. Éruption ne paraît plus sur les bras et avant-bras. Quelques petits points violacés sur le dos des mains. Éruption mal dessinée sur la poitrine. Aux flancs, même état qu'hier.

Dans l'après-midi, le délire commence. Prend un bain à 3 heures; baisse de $\frac{8}{10}$°. Est resté calme jusqu'à 6 heures. Nuit très agitée; délire assez fort; transpiration abondante et fétide.

5.—N'a pas uriné depuis hier, 6 heures. Il faut le sonder. Ne souffre pas trop de la tête. Se sent très faible.

Œil injecté et larmoyant; langue encore humide. Pouls assez bon, quoique très rapide: 152. Respirations 48. Cœur tout à fait fœtal. Poumon en bon état. Peau légèrement moite. Pression sur la rate non douloureuse.

Un peu d'albumine.

Très agité dans l'après-midi. Température 40°.4. Délire; veut se lever. Un bain vers 2 heures et un autre à 10 heures, produisant une baisse de $\frac{8}{10}$°. Il faut encore le sonder à 11 heures. Transpire beaucoup dans la nuit.

6.—Ce matin il est agité; délire, ne me reconnaît pas; veut se lever.

Carphologie. Langue sèche et noire; fuliginosités sur les dents et lèvres. Avale avec une certaine difficulté.

Pouls pas très fort: 132. Respirations 48. Température 39°.2. Cœur fœtal.

Les taches au ventre et aux flancs ont le caractère pétéchial.

La rate semble un peu douloureuse. Légère incontinence fécale.

Il faut encore le sonder.

Le bain calme momentanément la dyspnée et le malade éprouve un mieux être. Idées plus lucides.

Il reste sans connaissance pendant l'après-midi. Fait sous lui.

Pendant la nuit, respiration très irrégulière, tantôt très accélérée, tantôt très lente, avec arrêts. Transpiration abondante.

7.—Ce matin il est très mal. Dyspnée et stertor. Température 40°.2. Respirations 48. Pouls 160. La peau est moite. Légère contracture des membres et de la mâchoire. Sans connaissance. Cœur fœtal. Injection de 0.75 de caféine. Un bain froid à 10½ heures semble produire un léger calme. Mais bientôt la faiblesse s'accentue, le pouls faiblit, tombe à 120. Température reste élevée: 40°.1.

Meurt à 3¼ heures.

DR. C. C. DE BURGH DALY'S REPORT ON THE HEALTH OF NEWCHWANG

For the Half-year ended 31st March 1896.

DURING the period under review two births and no death occurred among the foreign residents.

As stated in a previous Report, the health of the foreign residents during October, November, and December of 1894 was very far from good; and now, in marked contrast to this, I am able to report that during the same months of 1895 there was an entire freedom from serious illness among both adults and children. I cannot, however, as yet congratulate the residents on taking any further precautions against the dangers that surround them. These dangers still exist, with all their unsavoury details, as pointed out in previous Reports. The water-boats, which supply the shipping, may any day be seen being filled up with the surface water of the harbour, containing filth of every description.

In January of this year an epidemic of influenza commenced, which attacked natives and foreigners, and did not finally disappear until late in March. The attacks varied much in severity, and in several cases complications of a more or less serious nature occurred. In one there was severe and persistent neuralgia, which, after many remedies had been tried, finally and completely yielded to hypodermic injection of morphia. In another, that of an adult male, inflammation of a varicose vein of the leg occurred, and gave a good deal of trouble at the time, but had a most happy result, inasmuch as the vein appears to be permanently plugged, thereby causing great relief to the previous symptoms. The patient declares that his leg has not felt so well for years, and that to all intents and purposes it is cured.

Only two cases of influenza gave grave cause for anxiety. On 30th January a boy, 8 years of age, was suddenly attacked with acute symptoms. The temperature, after a rigor, at once rose to 104°, and increased to 105°.4 on the 4th day. Bleeding from the nose was profuse and persistent, very seriously lowering the general vitality. Pneumonia of the base of the right lung soon set in, and, after running an acute course, terminated by a pronounced crisis on the 8th day, the temperature dropping from 104°.3 to normal, leaving the little patient utterly prostrate. From this point he made a rapid and complete recovery.

On 5th February his sister, aged 12 years, was attacked with the same symptoms, though the bleeding from the nose was not so severe. The temperature of 105° was at once recorded, and pneumonia of the base of the left lung was discovered. In this case the crisis occurred on the 7th day, when the temperature dropped from 102°.6 to 97°.4. Recovery was not so rapid or satisfactory, owing to a slight relapse.

On 9th February another brother, aged 7 years, was attacked with similar symptoms, the temperature rising to 104°.4; but, fortunately, here no lung complication occurred, and on the 4th day the temperature dropped to normal.

Dr. FYFFE, of H.B.M.S. *Rattler*, which ship wintered here, reports that, on the whole, the health of the crew was very satisfactory, the only serious cases being one of typhoid fever, which after an ordinary course terminated in complete recovery; one of small-pox (a mild attack), also terminating favourably; and one of typho-pneumonia, which, having run a rapid and severe course, ended fatally. Throughout the epidemic of influenza no case occurred on board the ship.

DR. JAMES H. McCARTNEY'S REPORT ON THE HEALTH OF CHUNGKING

For the Half-year ended 31st March 1896.

THE health of the foreign community during the past six months has been fairly good. With the exception of three cases of measles, two in children and one in an adult, no case of serious illness has to be recorded. Remarks are frequently made by both residents and non-residents as to the unhealthiness of Chungking, but this view is not supported by medical testimony. Here, as elsewhere in China and in other countries, there are those who are always suffering from either real or imaginary ailments, and Chungking seems to have its share of the latter class.

A few cases of neuralgia have occurred, due generally to decayed teeth, and in one instance partly to malaria. There was one case of morbid nutrition and one of chronic bronchitis, which conditions are not improved by this atmosphere. The other slight ailments were due as much to the indiscretion of the individual as to the climate.

There have been three births, two males and one female; but no deaths. The foreign community now numbers between 50 and 60 persons.

Among the Chinese there was an epidemic of diphtheria, which had a high mortality. Several cases were treated by me in the hospital, but there were no deaths. Remittent fever, as usual, claimed many victims. I treated several patients for insanity, among the number being the Taotai LI, who is well known to many persons in China and abroad. The disease in his case was no doubt due to the long-continued excitement caused by the riots of 1895. Under proper treatment and foreign nursing in the yamên, he became sufficiently convalescent to return to his home in Kweichow, whence he subsequently reported that he had entirely recovered.

The Japanese Concession, situated 2 or 3 *li* below the city, on the opposite side of the river, is well located from a sanitary point of view.

OBSTETRICAL NOTES.

Since the 1st January 1896 an unusually large number of difficult labour cases have been attended.

CASE 1.—Multipara. When called, the child had been born at least 24 hours, but the placenta had refused to come away, in spite of considerable pulling on the part of the old midwife. When she discovered that the patient was rapidly bleeding to death, she left, and advised that my services be procured. I found the womb in hour-glass contraction, and after much difficulty the placenta was delivered. The violent contractions of the womb had squeezed the placenta completely dry, so that it looked like a piece of desiccated pulp, and was about the size of a man's fist. The woman recovered, as far as I know.

CASE 2.—Multipara. Osteomalacia; had not walked for months. Had been in labour for several days, and was now almost exhausted with the pain. Feeble, rapid pulse. Head

presenting. Perforated, and soon delivered. The mother did well for two days, after which she was lost sight of.

CASE 3.—Primipara. Had been in labour two days. External parts œdematous. Patient in good condition. Head presenting; contraction of womb feeble. Applied forceps and delivered, under chloroform, a living child.

CASE 4.—Multipara. Prostitute. When called, the child had been born 12 hours, and the patient was nearly dead from loss of blood. The child was alive, lying between its mother's legs, and still attached to the cord. It was cut loose and the placenta, after some difficulty, taken away.

CASE 5.—Primipara. Had been in labour 24 hours; parts terribly swollen. On examination found osteophyte nearly filling the birth canal. The head was presenting, but it was not possible for the child to be born alive. Perforated, and delivered the mother of a male child. The patient made a good recovery.

CASE 6.—Multipara. In good condition. Had been in labour about 12 hours. Head presenting, but, owing to osteophyte formations, it was impossible to deliver the child alive. The patient was urged, as well by myself as by her father and the husband, to enter the hospital, so that the child, which was alive, might be removed by Cæsarean section; but our entreaties were of no avail. The head was then perforated, and the patient made a good recovery. Cæsarean section is out of the question in the majority of cases I have met with, on account of the mother being too much exhausted by prolonged labour. In fact, I have seen but one case previous to this where it would have been advisable to perform such an operation.

CASE 7.—Multipara. When called, had been in labour for several days, and the midwife, in her frantic efforts to deliver a shoulder presentation, had pulled the arm from the body. The patient was very weak from loss of blood, and, in order to facilitate delivery, I turned and delivered the child feet first. Patient made a good recovery, as far as I know.

CASE 8.—Multipara. Shoulder presentation. Chloroform was administered, and the child was turned and delivered feet first. Profuse hæmorrhage followed; but the patient soon rallied, and, as far as I know, recovered.

MEAN TEMPERATURE, January 1891 to March 1896, as taken by the Customs.

MONTH.	1891.	1892.	1893.	1894.	1895.	1896.
	° F.	° F.	° F.	° F.	° F.	° F.
January	50.5	49.2	45.2	49.4	49.0	57.5
February	49.3	50.3	46.9	53.0	55.3	50.3
March	54.5	56.4	59.1	58.0	58.6	56.0
April	65.4	71.9	67.0	72.5	72.8	...
May	74.3	71.7	75.5	71.0	74.5	...
June	75.7	75.6	76.8	78.6	82.4	...
July	85.8	81.8	83.3	84.8	79.0	...
August	78.0	84.9	79.8	85.7	82.3	...
September	76.2	74.4	75.5	76.0	75.7	...
October	67.7	66.3	67.8	69.7	67.2	...
November	58.9	58.3	59.6	59.6	58.1	...
December	52.2	50.2	50.7	51.2	52.5	...
YEARLY MEAN	65.7	65.9	65.6	67.6	67.3	...

CUSTOMS METEOROLOGICAL TABLE, October 1895 to March 1896.

MONTH.	THERMOMETER.					BAROMETER.		RAINFALL.
	Maximum.	Minimum.	Mean.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.	
1895.	° F.	° F.	° F.	° F.	° F.	*Inches.*	*Inches.*	*Inches.*
October	86	53	67.2	82	80	29.34	28.95	6.62
November	71	42	58.1	68	66	29.70	29.18	2.02
December	70	42	52.5	68	62	29.60	29.08	0.79
1896.								
January	65	39	57.5	62	57	29.52	28.96	0.34
February	66	39	50.3	64	59	29.44	29.08	1.05
March	76	39	56.0	71	65	29.98	29.13	1.89

Dr. JOHN D. THOMPSON'S REPORT ON THE HEALTH OF HANKOW

For the Nineteen Months ended 30th September 1895.

In the spring of 1894 measles broke out among some of the children of missionary families at this port. The children of one family suffered severely from complications, the youngest—an infant—dying of capillary bronchitis.

A mild case of small-pox in a foreign patient was admitted to hospital from the neighbouring district of Hanyang. In the winter and early spring every year small-pox occurs among the natives in the city. Vaccination (or at least the form of vaccination, for vaccine lymph is not always used) has, I am told, been practised by the Chinese here during the past six or seven years, and has now almost entirely, if not quite, superseded inoculation. Vaccination, of course, is not compulsory, and is rarely performed on children under 1 or 2 years of age. Revaccination is unknown. Small-pox, however, in Hankow city might almost be classed among the diseases peculiar to children. It frequently becomes epidemic, and is then very fatal to young children—to those, in fact, who have not been protected by efficient vaccination or by a previous attack.

During the summer and autumn of 1894 enteric fever of a severe type prevailed here. As early as June two mild cases were observed in the Concession; but all the severe cases among foreigners began in July and August, no fresh case making its appearance after the third week in August.

The months of July and August were exceptionally hot, even for Hankow. The maximum and minimum readings of the thermometer for each month, as given in the subjoined meteorological table, kindly prepared for me by the Acting Harbour Master, Mr. Havers, convey little real information from a vital physiological point of view. Continuous tracings are what are wanted; but even then important considerations, such as atmospheric impurities, would have to be represented. In July 1894 the maximum is given as 100° F., the minimum as 74° F., and in August the maximum as 104° F., the minimum as 75° F.; but from the middle of July till near the end of August there were weeks on end when the mercury practically never fell below 90° F. by night or by day, the average being nearer 95° F. Many suffered from heat malaise.

During the summer three foreigners died of heatstroke; two were workers at the Hanyang Iron and Steel Works, and the third a strong young adult resident in the Concession. The first death at Hanyang occurred on the 3rd July. The dead body was discovered in one of the worksheds in the early morning, no one having seen the man fall. I saw the body soon after it was found, and from its general appearance and high temperature there was no doubt of the cause of death having been heatstroke.

The second death from heatstroke occurred on the 20th August. Of this case I have the following note:—"On the 20th August 1894—a very hot day—it is reported that at about 4.30 P.M. Mr. G., while engaged in passing ingots of molten metal in the rolling department of the Hanyang Iron and Steel Works, suddenly fell to the ground unconscious. Cold applications were at once made to his head and body, and, without delay, the patient was transferred by boat to the Hankow Hospital. On arrival there he was still quite unconscious; breathing stertorous; pulse 120 per minute, soft and bounding; reflexes abolished; temperature, as taken in rectum, 110° F. He was immediately placed in a cold bath, cold douche applied to head, and a hypodermic injection of digitalis given. Though the temperature was gradually lowered to 101° F. in the rectum, the other untoward symptoms showed no sign of improving. On the contrary, breathing became more stertorous and laboured, pulse grew weaker and weaker, consciousness never returned, and at 10.30 P.M.—six hours from the time he fell—patient expired."

The third case occurred on the 23rd August. Being ill myself at this time, Dr. MERRINS (Wuchang) kindly relieved me, and the following note is compiled from his remarks on the case:—"On the 21st D. consulted Dr. M. about an eruption of furunculi. On the 23rd, at 6.15 P.M., while going his evening rounds, Dr. M. met D. on the Bund and remarked on the subsidence of skin eruption. D. answered that although there was improvement in this respect, he was now feeling feverish. Dr. M. therefore directed D. to go to Dr. T.'s house and there await his return. While continuing his rounds, word was brought to Dr. M. that a foreigner had fallen down on the street, near A. K. and Co.'s. Dr. M. immediately went to the spot indicated, and found patient (D.) in a comatose condition; pulse fairly strong but rapid; breathing slow and stertorous. Dr. M. had him at once taken to hospital, where he was placed in a cold bath, and every effort made to reduce the extraordinarily high temperature, 112° F. in rectum. Patient never rallied, and when temperature was at 109° F. in rectum he expired, the respiratory preceding the cardiac failure."

Two days after this one of the veterans of the place died of heat exhaustion following on a simple attack of diarrhœa.

The outbreak of enteric fever above mentioned perhaps deserves more than a passing notice. The author of the article on "Tropical Typhoid Fever" in DAVIDSON'S *Hygiene and Diseases of Warm Climates*, in speaking of the distribution of enteric (or typhoid) fever, says (p. 219), "Our information about the diseases which exist in the interior of China is meagre, but we know that the Chinese ports are affected by this fever." Further on, under "Race Liability" (pp. 222, 223), after quoting DAVIDSON on Madagascar, he says, "On the same authority (DAVIDSON), some districts, at least, in China suffer largely from this fever: Peking, Shanghai, Foochow, and Formosa come under this category, while in Swatow, Amoy, Chinkiang, Hankow, and Kiukiang it is rare." Now, there can be no doubt that typhoid exists plentifully among the Chinese here. Owing, however, to pagan sentiment and the sanctity with which they regard the bodies of their own dead, it is impossible to obtain absolute postmortem proof. Since I came to Hankow, in 1889, there has not been a summer and autumn without one or two cases of enteric fever appearing among the foreign residents, the steamer population, or visitors to this port. Though, no doubt, here as elsewhere, the natives

of the place are less susceptible to enteric fever than are late foreign arrivals, yet the conditions under which they live, and their habits, expose them more. Given, then, a single case of enteric fever, it is easy to see how, where filth abounds as in a Chinese city, it must develop. In the *Epitome of Customs Medical Reports*, published in 1884, it is written of Hankow (p. 28), "Among the Chinese several cases occurred of a fever which 'ran the typical course of typhoid.'" Such cases occur yearly.

In the summer and autumn of 1894 the number of foreigners who suffered from enteric fever greatly exceeded that of any previous year. A large proportion (7 out of 16) were blue jackets and marines of H.B.M.S. *Pigmy*, then stationed at this port. They, of course, must have contracted the disease on shore, and most probably from drinking polluted water in Chinese restaurants bordering on the Concession.

Though the topography and the drainage of the place have been dealt with in former Customs Reports, I must here briefly sketch the situation and draw attention to important points. Hankow city lies along the left banks of the Han and the Yangtze, filling up the obtuse angle formed where the Han throws itself into the Yangtze. Beyond the Han is the city of Hanyang. The city of Wuchang lies facing Hankow and Hanyang, on the opposite bank of the Yangtze. The foreign Concession of Hankow lies immediately below, and adjoins, that portion of Hankow city that stretches along the Yangtze. The underground flow thus sets from the city obliquely towards the Concession; and the waters of the Yangtze are polluted on its left bank by two cities and a large junk population immediately before passing the Concession. The Concession is a flat, and has been raised from time to time, chiefly by mud that has been deposited by the river, taken from the Bund frontage in winter when the river has subsided. The Concession is still subject to general inundation. The last flood took place in autumn 1889. Behind the city wall is a vast plain, which is regularly submerged for three or four months every year. Between the winter and summer levels of the river there is a difference of over 40 feet. A certain winter level has been taken as zero; and when the river rises in excess of 46 feet above zero the Concession is flooded.

The conditions herein described, the rapid rise and fall of the river with its accompanying fluctuations in the level of the ground water, give one an opportunity of examining PETTENKOFER'S views "on the influence of the ground water on the prevalence of typhoid fever." The river begins to rise usually in March, reaches its maximum in July or August (sometimes later), and subsides again to reach its minimum in February or March. PETTENKOFER attributes "a direct connexion between this disease and the fluctuations in the level of the ground water." He states that "outbreaks of typhoid fever occur when the ground water is lowest, and especially when it falls rapidly after having risen to an unusual height." This statement, of course, must not be judged apart from other considerations. In all parts of the world, we are told, enteric fever (where it exists) is more common in summer and autumn than in spring or winter, and "in those countries which have a distinctly marked hot and cold season the disease is at its maximum in the hot season." We would not therefore expect to find enteric fever most prevalent here in winter, even although the river, and consequently the ground water close to its banks, is lowest then; but, given infected soil and susceptible human beings, we

would expect to find, if PETTENKOFER'S view be correct, that enteric fever would be most prevalent in those years when, during the hot season, a rapid fall follows a high level of the ground water.

The river curves give practically the ground water levels in the Concession. If we look now at the accompanying diagram of river curves for the past seven summers, we see at once that the curve for 1894 is singular in that it reaches its height early, falls rapidly, and maintains a comparatively low level throughout what remains of the hot season. July and August are the hottest months, though the hot season may be said to begin in June and end in September. The Bund level is 46 feet; parts of the Concession are still lower. With the river at 43 feet, therefore, the ground water level in the Concession is near the surface. From this point, reached on the 28th June, there was a steady fall until the 8th August, of 11 feet 4 inches.

The curves of 1891 and 1892 reach to much the same height as that of 1894, only a full month later. There is a steady fall in August and September. In both years there were cases of enteric, beginning in August; none began in July.

The curves of 1889, 1890, and 1893 reach their highest points still later. But here a new factor has to be considered. With the river at 44 feet and upwards, the mouths of the drains are entirely under water and the filth in the underground drains is washed backwards into the Concession. In those years there were cases of enteric fever before the river began to fall—not half so many in all three put together, however, as there were in July and August 1894.

In the present year (1895) the curve from the 1st June to the middle of August is almost a reversal of that for the same period of 1894. Whereas enteric fever was very prevalent during those months in 1894, it was all but absent throughout the corresponding period of 1895. This in itself would seem to support PETTENKOFER'S view. As some of the severe cases in 1894 began early in July, the ingestion of the poison—to allow for an incubation stage—must have taken place, if not before, at all events soon after the autumn set in. Again, in 1895 more attention was paid to drains, and perhaps greater care was exercised to secure the absolute purity of the water used for drinking purposes.

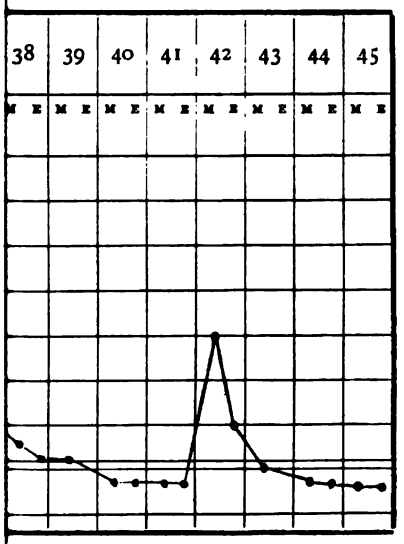
There are few who will deny the high probability of a direct causal connexion between Eberth's bacillus and enteric fever. In some soils impregnated with this bacillus a sudden fall after an unusual rise in the level of the ground water may, at the proper season, be specially favourable to its growth, or may even add to its pathological vigour.

Almost all the cases of enteric fever that occurred in July and August 1894 had slight bronchial catarrh to begin with. A large proportion of those sent from H.B.M.S. *Pigmy* had high fever and delirium on entering the hospital. One, on admission, had delusions of the "mental exaltation" type. He imagined that he had accomplished wonderful feats of strength and valour; that Lord ROSEBERY had applauded and personally congratulated him; and that now he had been summoned to appear before Her Majesty the Queen to receive from her own hands the Victoria Cross, with her special thanks for mighty deeds done in the service of his country. At times he got violently excited and had to be restrained in bed. Cold baths—cold "well water," for no ice was to be had—soothed him on several occasions. Meanwhile the heat was intense. At that time the temperature in the ward never fell below 93° F. night or day

W, FROM JUNE TO OCTOBER. 1889. TO. 1895.

EMBER								OCTOBER															
6	18	20	22	24	26	28	30	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	

60


38
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44
45
M E M E M E M E M E M E M E M E

(average over 95° F.). Patient soon sank into a state of low, muttering delirium. While in this condition he at times tried to raise himself and get out of bed. Once he escaped the vigilance of his attendants and had a fall, which, for the moment, seemed to bring him to his senses. Soon he relapsed into the same low, muttering, delirious state, and died of heart failure on the seventh day after admission to hospital. At the autopsy held a few hours after death, Peyer's patches in the lower portion of the ileum, and the solitary follicles as far as the cæcum and ascending colon, were found to be in a state of tumefaction and commencing ulceration. The mesenteric lymph glands near the affected parts of the intestine were purple red and swollen, like geans and cherries.

Of the 16 cases of tropical typhoid treated that season—most of them severe,—the above case was the only one that ended fatally. It seems therefore worth recording that the autopsy disclosed the characteristic internal lesions.

As is well known, the temperature charts in cases of enteric fever in hot climates, or during tropical heat, are often very irregular and ill-defined, seldom following the course supposed to be typical of the disease in Europe during the first week.

Chart 1 is that of the fatal case recorded. In this as in all the other charts only the morning and evening temperatures are marked. Allowance must be made for special efforts to prevent hyperpyrexia when the temperature was evidently on the bound, or to reduce it when it occurred. The mid-day temperatures often considerably exceeded the evening temperatures.

Chart 2 shows a relapse occurring before the end of the third week. The patient in this case was quite unconscious for more than two weeks. During this time urine and motions were passed involuntarily in bed, so that special arrangements had to be made. Nourishment, in the shape of strained soups, boiled milk, etc., had to be poured down patient's throat. Brandy, unfortunately, often caused immediate retching, and sometimes severe vomiting, when given by the mouth. Champagne acted in much the same way. Rectal feeding had to be resorted to at times, and when stimulants were urgently called for, brandy mixed with milk was often successfully given in this way. Convalescence was slow for a time, but ultimately very satisfactory. The sudden rise in temperature at the end of the fifth week of chart, and the other in sixth week, were evidently malarial, though the patient had never previously suffered from malaria. Quinine was given immediately after the first rise, and continued in larger doses after the second. On the 10th day after the last rise indicated on the chart there was another sharp rise, less marked and of shorter duration than the preceding. After that there was no other.

Chart 3.—Patient sent to hospital probably about the end of the first week of the disease. He was delirious on admission. By the morning of the third day after admission he was in the condition of coma-vigil, with subsultus tendinum and "floccitatio." In this state he remained for two days, and subsequently did remarkably well. During convalescence he complained for a time of intense pain in one foot, always worst at night. External applications were of no avail, and sleep was impossible until morphia was injected hypodermically. Periostitis or myelitis of one or more of the tarsal bones was suspected. At no time

was there redness, heat, or swelling perceptible, and in the course of a week the pain entirely disappeared.

Chart 4.—Irregular and ill-defined, with a sudden drop to normal on the morning of what was probably the 7th day of the disease. After this the temperature ran a low course. The case is here introduced chiefly to point out the necessity of care in such instances. Though the temperature ran low, the patient—a young man—was greatly prostrated, with pupils widely dilated. The very prostration, however, might have been a temptation, were one doubtful of diagnosis, to vary the diet; and had solids been given during the second and third weeks, when the temperature ran low, the case, I have no doubt, would have ended very differently. The patient did well. During convalescence there was, as in Case 3, acute pain, as of periostitis or myelitis, in one malleolus and also deep in ilium.

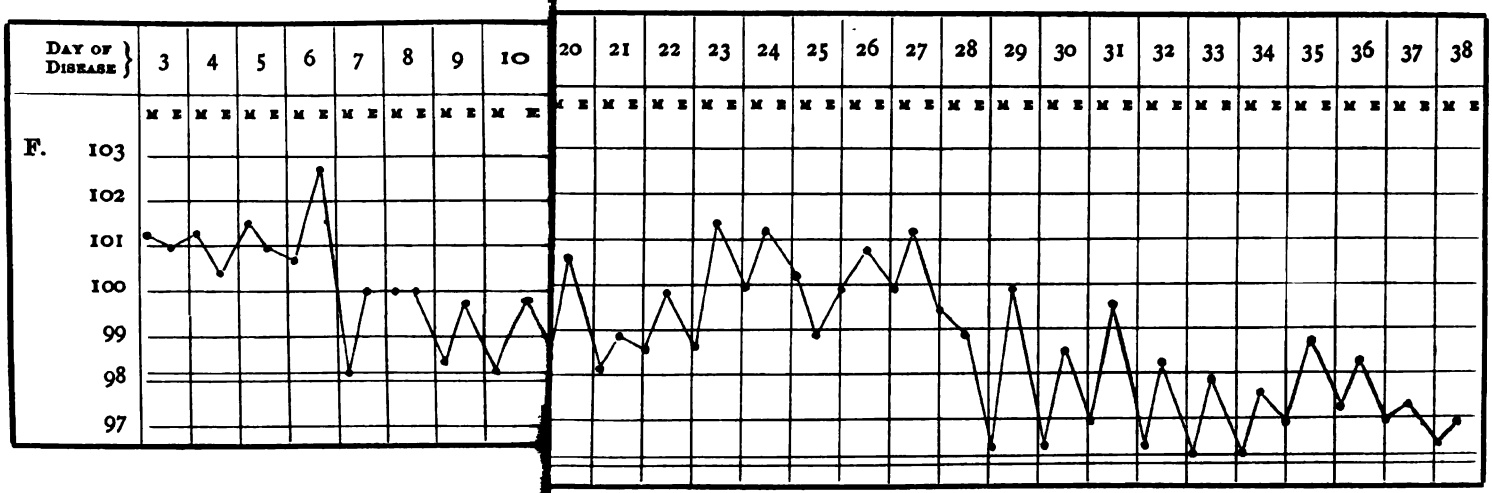
Chart 5.—A not very regular and a fairly high temperature throughout, with a relapse occurring about the beginning of the third week. The patient in this case—a young able-bodied seaman—was irascible, impatient of being confined to bed while even a little strength remained, and unwilling to submit to the necessary strictures in diet. Temper and restlessness, if not directly responsible, probably paved the way for a relapse. Convalescence was slow and complicated by boils. On leaving hospital he went to Chefoo to join his ship, and on his return to Hankow some months later he was in the best of health.

Chart 6.—This case was complicated by thrombosis of the right femoral vein and embolism of a branch of the pulmonary artery in the right lung. The temperature during the first two days that the case came under observation (probably the 4th and 5th days of the fever) was, as indicated on chart, higher in the morning than in the evening. Mental depression and circulatory weakness were marked features from the beginning. Symptoms of threatening heart failure gave great anxiety on several occasions. For this, brandy was given from the start, and caffeine, strychnine, and digitalis were added when deemed advisable. The local and general signs and symptoms of thrombosis of the femoral began on the 21st day of illness, just as convalescence was about to set in, and these were followed, on the evening of the next day, by symptoms of embolism of a medium-sized branch of the pulmonary artery. With the exception of the "seven-day" rises in temperature towards the end of the illness (in the fifth, sixth, and seventh weeks as indicated on chart), and an irregular and intermittent pulse during the first days of September (*i.e.*, during the seventh week), the patient made an uninterrupted and most satisfactory recovery.

Chart 7.—Temperature prolonged, without any definite relapse. For certain reasons, round worms were suspected; and when the temperature rose during the fifth week, santonin was given, and two round worms, about 8 and 9 inches long, were ejected by the mouth. After this patient did well.

Chart 8 is that of another case in hospital about the same time. Patient had undoubtedly been suffering from enteric fever, and was sent to hospital in a very weak state, as a case of relapse. A day or two after admission he vomited a large round worm, 14 inches long. The temperature fell soon after this to normal. Santonin was given, but no more worms were passed. The temperature never rose again, and patient made an uninterrupted recovery.

5.


Day of Disease
3 4 5 6 7 8 9 10
20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38
M E
F.
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102
101
100
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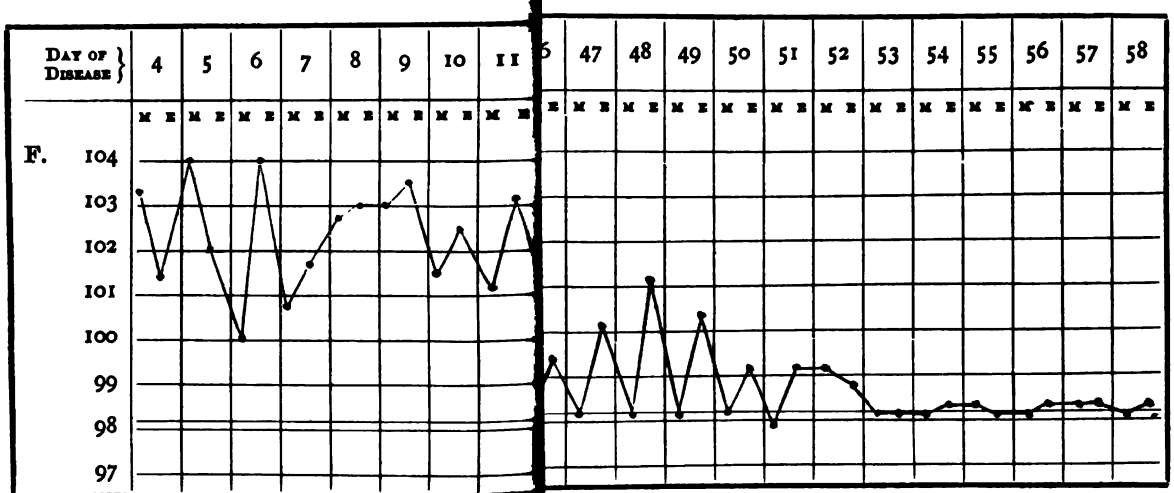
98
97


Day of Disease
4 5 6 7 8 9 10 11
47 48 49 50 51 52 53 54 55 56 57 58
M E
F.
104
103
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101
100
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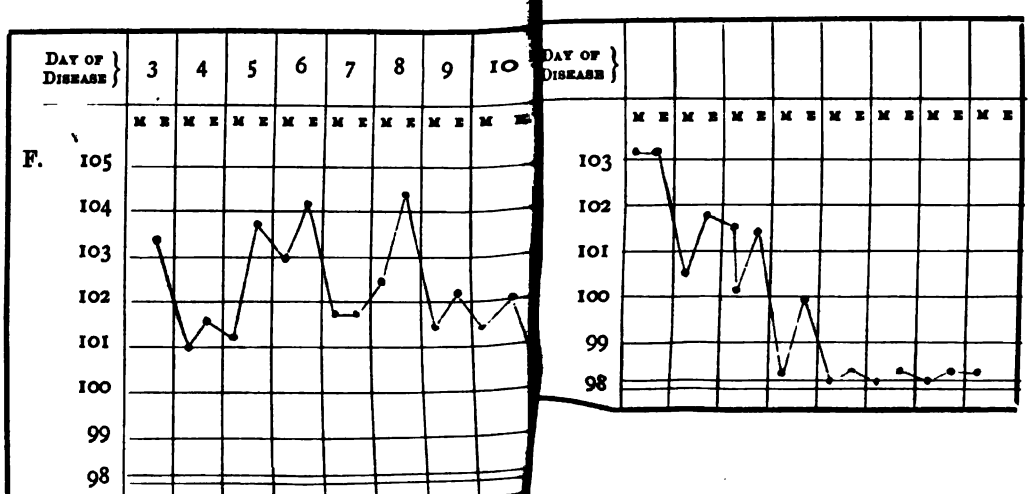
Chart 8.


Day of Disease
3 4 5 6 7 8 9 10
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Among all the cases treated there was no serious bowel complication—no very troublesome diarrhœa, no great meteorismus, no case of hæmorrhage, none of perforation. This freedom from bowel complication among so many severe cases I attribute chiefly to the exhibition of salol as a bowel disinfectant from the time the patients came under treatment. Salol does not seem to be able to prevent the occurrence of relapse; but it has a decided effect on the stools. If offensive and fluid, they soon become sweet and formed. It was usually given in 15 or 20 grain doses every four or six hours, until the stools became sweet; then at longer intervals and in diminished doses. As in larger doses it tends to depress the patient, it was, as a rule, combined with caffeine. If the patient were constipated, as was not unfrequently the case, calomel was added during the first day or two. Diet was boiled milk with lime water or barley water, and strained soups (meat soups, made with the addition of fresh vegetables, etc., well cooked and then strained through fine muslin). These were given at regular intervals, and in quantities and combinations suitable to each case. To reduce high temperatures, tepid and cold spongings were employed; occasionally, cold baths; and frequently also phenacetin, in 5-grain doses, repeated at intervals of an hour or two hours, until, if necessary, three doses were prescribed. Stimulants (good brandy—sometimes champagne) were given when required, also strychnine, digitalis, etc., according to circumstances.

Salol in medicinal doses, as already mentioned, does not prevent the occurrence of relapse, neither does it prevent the disease from running its usual term of three weeks. Its beneficial effect is due, I believe, not to any direct action on the bacillus of typhoid, but to its action on the putrefactive micro-organisms in the intestine. These, I would suggest, secondarily invade the infected Peyer's patches, and are chiefly responsible for the subsequent sloughing *en masse*. It is known that on gelatine plates treated with carbolic acid the typhoid bacillus (and B. coli) may thrive, while the growth of other micro-organisms is retarded. Advantage of this fact is taken to eliminate other micro-organisms in examining a water supply for the bacillus of typhoid. Substitute, now, Peyer's patches already attacked by the bacillus of typhoid for the nutritive plates, the carbolic and salicylic acids into which the salol splits in the intestine are sufficient to prevent the growth of putrefactive micro-organisms, but do not interfere with that of the typhoid bacillus (and B. coli). No serious bowel complication occurred in those cases treated with salol, as above stated, neither were sloughs seen in the stools. These facts, then, fairly suggest that the sloughing *en masse* of Peyer's patches, and the complications that may arise therefrom (severe hæmorrhage, perforation, etc.), are really due to secondary invasion by putrefactive and saprophytic micro-organisms of the intestinal contents, and not to the bacillus of typhoid *per se*.

During the hot months cases of fæcal accumulation and autoinfection (absorption of poisonous ptomaïnes from the bowel) constantly occur. The bowels may act daily, but, possibly from atony accompanying general nervous and muscular depression, they never quite empty themselves. In some such cases irritation of retained masses causes a false diarrhœa, and this may bring the patient to consult the medical attendant. In others, absorption of poisonous ptomaïnes takes place. Putrefaction of intestinal contents is probably favoured by altered intestinal secretions following vitiated nerve energy. Various poisonous ptomaïnes, varying with the micro-organisms present, are developed, and possibly absorbed. Some cause a sudden rise

in temperature. This may in a few hours reach 105° F.; the skin is then hot and dry, and severe headache is usually complained of. Such, however, belong to the simpler cases, and a timely dose of castor oil will probably be all that is required to rectify matters. The severe headache, the burning, dry skin, may call for something more. In these sthenic cases, then, a dose of antifebrin (5 grains for an adult) dissolved in brandy and water, given along with the oil, will be found to act very satisfactorily. This is generally followed by cessation of the headache, profuse perspiration, and sleep from which the patient wakes refreshed and well. A third class of cases seems more or less to depend on ptomaïnes that tend to paralyse the bowel and differs from cases of mechanical obstruction, or the slow banking up that leads to typhlitis or appendicitis. Diarrhœa may be present (the stools dark brown and very offensive), though the bowel remains more or less fully relaxed. Some cases simulate enteric fever; and for a time it will perhaps be difficult to give an absolute diagnosis. In etiology, however, these cases are more nearly allied to those of thermic fever or heatstroke. Climatic influences are at work in both; but in the latter the factor heat is so predominant as to obscure other climatic causes. The personal equation, too, must weigh largely. If this were not so, all would suffer, and suffer alike, or none would suffer.

In this connexion I wish now to relate the two following cases, one of climatic continued fever, the other of thermic fever or heatstroke, terminating suddenly 10 days after the onset of the illness or first exposure:—

1.—In June and July 1894 Mr. A. suffered more or less continuously from low fever, which began with gastro-intestinal disturbance and a blotchy, urticaria-like eruption lasting for four days. This eruption came and went, attacking first the extremities and trunk, and lastly the face. Inertia of bowel was marked. By repeated enemata, and by purgatives exhibited by the mouth, the bowels were with difficulty cleared. The stools were high-coloured, fluid, and offensive. The urine was high-coloured and clear, with the exception of a light cloud of mucus, highly acid, S.G. 1,020 to 1,023, no albumen, no sugar. The temperature ranged from 99° F. to 102° F., and sometimes, though rarely, 103° F., showing no periodicity, but, on the contrary, great irregularity in its rise and fall. Later in the course of the illness the temperature was usually highest in the morning, before breakfast. A late feature in this case was severe headache and muscular pains. There was weakness, and considerable loss in weight. The thoracic and abdominal organs were examined from time to time throughout the illness, and no sign of organic mischief was detected. In such cases the only cure is, I believe, to send the patient to a more bracing climate—to the seaside or to the hills—for a thorough change. This, of course, cannot always be done just at once. The treatment, then, has to be more or less symptomatic, and must begin by clearing the bowels, dieting, and trying to keep the contents sweet by improving, if possible, the gastro-intestinal secretions. The patient whose case has been shortly sketched, after going on for about six weeks and attending to business while he could, had ultimately to leave for a change; and even then, as the case had lasted so long, and as the patient had the uric acid or gouty diathesis, it was some time before he got quite well again.

2.—Mr. B. had been out of sorts for some time; and on his way up river, towards the end of July, went on shore at one of the ports, exposing himself, insufficiently protected, to the full

mid-day sun. He returned on board feeling very ill. On the evening of the day of his arrival in Hankow he sent for me. He told me he had not slept all the way up river. Complained of severe headache and of feeling very tired. His temperature was then 102°.5 F.; skin hot and dry; complexion muddy; features relaxed and expressionless; pupils somewhat contracted; tongue dry and slightly furred; breath offensive; pulse slow, full, and fairly compressible. He was kept in bed; and efforts were made to reduce the temperature, to relieve the headache, and to clear the bowels. He was sponged with tepid, then with cold, water; ice was applied to head; phenacetin was given, also an enema and calomel purge. Next morning headache was gone; the bowels had moved, and the motions were at first dark brown, fluid, and very offensive. The skin was still dry, and the other symptoms much as before. Cold baths were tried. After this, all the patient complained of was weakness, and restlessness at night, with distressing nightmare whenever he dozed off. During the next few days his temperature varied from 102° to 104° F.; headache never returned; but skin remained hot and dry. The temperature of the room could not be lowered below 90° F. at night, nor below 95° F. during the hottest part of the day. The quality of the heat, too, was very trying—a hot south wind and an atmosphere laden with impurities. During the night of the 5th August he was at times delirious. Next morning and at 11 A.M. his temperature was 103°.5 F. under the tongue; pulse slow, fairly full during the stroke, but collapsing between beats; tongue dry, with a light brown fur; complexion muddy, and features relaxed and expressionless as before. Abdomen was somewhat tumid; there was gurgling but no tenderness in right iliac fossa. He had no headache, and expressed himself as comfortable; had rather enjoyed his morning meal, and was reading the morning paper. Reading, he said, did not give him a headache, and helped to pass the time. On the afternoon of same day he suddenly became delirious, rose, and tried to dress; but dropped back in bed dead. His temperature must have suddenly bounded up, for whereas three hours before death it was 103°.5 F., three hours after death, just before autopsy began, it was 109° F. in rectum. The autopsy revealed the ordinary positive and negative signs of heatstroke. The blood was dark and flowed freely from the incisions. The interior and the viscera felt pungently hot to the hand. The abdominal wall was very fat, the mesentery loaded with fat, and all the important viscera round which fat is apt to accumulate—the kidneys and heart more especially—were encased in fat. This amount of internal fat in an otherwise well-built, athletic man must have rendered him more susceptible to the noxious influences of heat and overheating. The liver was fatty. The kidneys were rather pale—the cells in state of cloudy swelling. Heart: left ventricle contracted, thick wall (athletic subject); right ventricle dilated with dark fluid blood, thin walled, the muscular structure at apex being reduced to a line. The intestines were very carefully examined. There was no sign of swelling or congestion of Peyer's patches or solitary follicles. In fact the intestines appeared perfectly healthy, their contents sweet, and the mesenteric glands normal.

Acute dysentery may occur here at any time in summer or autumn, but is most frequent towards the end of August and in September, when the nights begin to get cool and when sudden drops in the temperature are apt to occur. During summer and autumn of 1894 and 1895 a fair number of cases came under treatment. All in my practice recovered.

During the past season I have used the new preparation, ipecacuanha without emetin, in place of the ordinary ipecacuanha powder. The effect on the dysentery appears to be the same, and it can be administered without the previous exhibition of laudanum. Opium is by no means always indicated, and can, I believe, if injudiciously given, do much harm. By masking symptoms and by weakening the power of tissue resistance, it may, as it were, lull the sentinels to sleep, destroy the garrison, and throw open the citadel to the enemy. In one or two cases the ipecacuanha without emetin caused nausea; but in one only could it not be retained, producing vomiting just like the ordinary ipecacuanha powder. The usual precautions—the recumbent position, mustard to epigastrium, avoidance of fluids, etc.—were observed, as in giving the ordinary ipecacuanha, only the dose was not preceded by laudanum. In addition to ipecacuanha, hot fomentations (medicated or unmedicated) were, as a rule, applied to the whole abdomen. In most of the cases, too, enemata of warm, weak quinine solution (5 grains of quinine to 20 or 25 ounces of boiled water) were used, and these, carefully administered, had nearly always a soothing effect and, along with the fomentations, diminished the frequency of the stools.

In one or two milder cases repeated small doses of Glauber's salt, hot fomentations, and weak quinine enemata constituted the whole treatment. Where symptoms were urgent from the beginning, no time was lost in giving a large dose of ipecacuanha. For an adult the quantity prescribed of the ipecacuanha without emetin was usually 45 grains, to be repeated, in same or smaller dose, in four or eight hours, according to necessity. One child took three 20-grain doses in 12 hours without being in the least nauseated, and with the desired effect of cutting short the dysentery. In this case, I may mention, the quinine enemata did not seem to answer, and were discontinued. Sometimes boracic, followed by tannic, acid enemata were used.

Case of Liver Abscess bursting through the Diaphragm and involving the Lung; Death; Autopsy.—K., A.B. from H.B.M.S. *Esk*, sent from Ichang, arrived in Hankow and was admitted to hospital on the 18th August 1894. His medical history sheet showed that he had suffered from Bright's disease in 1893. From notes of his case sent by the surgeon it appears that, for his present illness, he was first placed on the sick list on the 4th July, suffering from diarrhœa. The attack lasted a fortnight. The stools were mostly light coloured, and in consistence varied from liquid to semi-solid. His temperature was taken regularly during the fortnight, and was never found to exceed 99° F. On the 23rd July he returned to duty; but was again put on sick list on the 26th. This time the stools were dark in colour, offensive, one to seven per day. His temperature now reached 100° F. He complained also of pain in epigastrium, as well as over the whole abdomen. On the 5th August diarrhœa ceased. On the 12th he complained of pain in the right shoulder, and on the 14th, of pain in the liver region. By this time he had become greatly emaciated, and, as he was rapidly getting worse, he was recommended for hospital treatment.

On admission to the Hankow Hospital, on the 18th August, he was seen by Dr. MERRINS, who was then acting for me. He had great pain in the right side, over the whole of the liver region. This was relieved by hot medicated fomentations. Chloride of ammonium was prescribed. His temperature was over 104° F. When I saw him for the first time, on the evening of the 25th August, I did not doubt the existence of liver abscess. The area of liver

dulness was greatly enlarged, and the costal interspaces, which on the left side were sunken and hollow, were level or bulging, especially over a very tender area in the 7th interspace in the anterior axillary line. The weather at the time was very hot and sultry (average temperature over 95° F., day and night). Being free from continuous pain, patient now felt much more comfortable; and so expectant treatment was continued. In the course of a few days he began to cough up quantities of liver pus. His temperature fell, but his general condition did not improve. Diarrhœa supervened, and cough and diarrhœa together soon pulled him down. He sank inch by inch, and died of sheer exhaustion on the morning of the 11th September. Emaciation was extreme.

At the autopsy the liver was found to be much enlarged, and closely adherent to the diaphragm and to the parietes. The right lung, the liver, and the right half of the diaphragm were removed *en masse*. An excavation on the upper surface of the right lobe of liver, and another in the base of the lung, together formed a large, irregular, spherical-shaped cavity, about 3½ inches in diameter, with ragged, sloughing walls, and containing a dirty pink, "crushed strawberry and cream" coloured pus, most of which escaped on tearing through parietal adhesions. The rest of the lower lobe of the right lung was infiltrated with the same pinkish coloured liver pus. The liver substance was pale on cut section. There was just the one abscess, that on the upper surface of the right lobe, which, as shown, had burst through the diaphragm, involved the lung tissue, which, from its low vitality, readily gave way, and entered into the formation of the large, irregular, ragged cavity above described. The apices of both lungs were adherent to the parietes, scarred by old cicatrices, and contained calcareous nodules. The next organs markedly diseased were the kidneys. They were small, contracted, and each weighed 4 ounces. The capsules were adherent over the entire surfaces. The cortices were atrophied—cortex : papillary layer :: 1 : 5. Spleen appeared healthy. Pancreas firm and tough, coarsely granular on cut section, of a pale greyish-yellow colour. Heart contained in each cavity, in addition to soft, dark clot, pale fibrinous clots extending from their respective cavities into the pulmonary vessels and the aorta. As for the rest, the appearance was that of one who had died of slow starvation. The intestines were collapsed and walls thin and transparent: the mesentery was a fine network, absolutely devoid of fat. The stomach had the appearance of so-called "double stomach," but this was evidently due to annular constriction at time of death. The walls at the constricted portion felt thick compared to the rest, and could be pulled into shape again.

On first seeing this case, I considered the question of exploratory puncture, with a view to freely evacuating the pus, if found. The general indications, however, both before and after the patient began to spit up liver pus, seemed rather in favour of expectant treatment, which, accordingly, was continued. The result of the postmortem—the site of the abscess, the condition of the kidneys—shows clearly that at no stage of the illness, probably, would operative procedure have been of any avail.

The following case seems sufficiently interesting to refer to here:—R., a "heavy weight," fell from his pony while jumping a creek, and came down, it appears, flat on his back on fairly hard ground. His pony escaped and left him with bridle only. The friends who were with him, seeing him get up almost immediately, and apparently unhurt, chaffed him about the nice

2-mile walk he would have before dinner. He returned chaff for chaff, and started for home. On reaching there his manner and appearance attracted the attention of his friends. He imagined he was in Kiukiang, and was surprised at seeing so many Hankow friends in his room. When I saw him he was lying on the bed, still in riding attire. On drawing his attention to this, he remembered having gone for a ride, but had no recollection of what had happened since. He answered questions coherently, helped to change his riding dress for pyjamas, and did just as he was told to do. On raising his head on a pillow and applying evaporating lotion to head, he recovered so far as to recognise the room; but a wardrobe similar to one he had in Kiukiang seemed to puzzle him. He could not reconcile the two. The wardrobe, he said, was in Kiukiang, but the room was in Hankow. He was ordered colocynth, hyoscyamus, and mercury pills, and a bromide mixture, and to continue lotion to head. On my visit next morning I found him quite well; but he had no recollection of my visit on the previous evening. From the time he fell till the time a friend called to see him, one hour after my first visit, his memory was a blank. He could not remember about the fall, nor how he reached home, though he came straight to his own room, bridle in hand, having walked all the way alone—a distance of 2 miles over country. He had throughout no headache, no bruise, no pain anywhere, only slight tenderness on pressure over the spine in the lumbar region.

In March 1895 influenza again appeared. There were few cases, but these were quite as severe as on former occasions. In my own case (for though I had escaped in former years, I was among the first to go under on this occasion) temperature rose high, headache was intense, and I had pains all over my body. Prostration was marked, and the feeling of exhaustion so extreme that I felt as if I could not hold out much longer. Without any apparent cause, I once burst into tears, much to my own confusion. This depression and the tendency to weep have often been remarked upon; and the sensations are by no means pleasant. After the temperature had fallen, my body felt bruised, as if it had been beaten all over with clubs, and my bowels as if they had been put through a mangle. Though ill for three or four days only, I was unable to stand on first attempting to get out of bed. In nine days I was able to be at work again, though many weeks passed before I felt quite all right.

With the exception of the last week of July and the first week of August, the summer of 1895 was rather mild. June was dry, and perhaps hotter than usual. The first three weeks of July were cool. The great heat burst upon us suddenly towards the end of July, and lasted for nearly a fortnight. During that time the weather was peculiarly depressing; the barometer was low, and a light south wind blowing over the city came to us laden with impurities. Many suffered, and three died, directly or indirectly, from the effects of heat combined with the peculiar atmospheric conditions.

The first death was that of a female infant, aged 8½ months. She had suffered from a troublesome eczema that began with teething, had become chronic, and irritated her considerably, disturbing her rest and often preventing sleep altogether. By the end of July her skin had healed, though still thickened over a comparatively large area, and thus unable to adequately perform its functions. This, added to other teething troubles, no doubt rendered her less resistant to the deleterious effects of the hot weather, and she died rather suddenly at the beginning of the great heat.

In young children dying during the heat I have observed that a quiet necrosis of the cornea invariably sets in an hour or two before death. There is no inflammatory reaction, only loss of substance, as if part of the surface had been scraped away with a knife or scooped out with the finger nail. Though other indications are not then wanting, this is a sure sign that death is not far off. It is, in fact, death already evident in parts of little vitality.

The second case was that of a strong, healthy man, in the prime of life, who died of heatstroke about 4 A.M. on the 3rd August. Two days previous to this, it appears he had imprudently exposed himself to the sun; and complained afterwards of feeling out of sorts, of weariness, and of dryness of skin. On his own account he took measures to relieve the bowels, and followed this up by swallowing 10 grains of quinine. He went to bed early on the evening of the 2nd August; and in the early morning, presumably feeling ill, went to an adjoining room to call a friend. Once there, he tried to speak, but could not; and on being helped back to his own room and seated on the edge of the bed, fell backwards dead. I found the body in the position in which he fell. The head, trunk, and thighs were recumbent on the bed, the knees bent over the edge of it, and the feet on the floor. The skin was pungently hot, the temperature in axilla 109°.5 F. There was no autopsy in this case.

The third case has been already described as that of Mr. B., and the result of the autopsy is also given.

Fevers of malarial origin, among foreigners as well as natives, have been more prevalent during the spring, summer, and autumn of 1895 than for some years past. From previous experience I looked upon malaria as a very insignificant feature in the physiognomy of disease as met with in our community. The more severe and malignant types that one occasionally met with among the foreign residents had invariably been imported from other parts, as from South China and Formosa. Among natives from the surrounding districts, however, quotidian and tertian forms prevail from the beginning of spring till the end of autumn; while at all seasons numbers of patients come to the hospital with enlarged spleens, profound anæmia, ascites, and other signs of advanced malarial cachexy. While this is so among the agricultural classes, it is different with the inhabitants of the city; they do not seem to suffer much from malaria. The residents in the Settlement, who rarely go beyond the municipal boundaries, suffer still less.

Cholera, following the lines of traffic and in the tracks of disbanded soldiers, appeared here in August, soon after it had been reported as prevalent in Shanghai. In the cities of Wuchang, Hankow, and Hanyang it raged for some weeks, carrying off numbers of the inhabitants—how many it is impossible to say. A few cases—20 in all—were brought to the Roman Catholic Hospital for treatment: some were picked off the street, others were sent from steamers and from neighbouring hongs. Of those 20, 10 died in hospital; 3, after surviving the collapse stage, were taken from hospital too soon by their relatives and died at home; while 7 recovered and left hospital quite well.

One of the hospital sisters, aged 67 years, who attended to several of these cases, was suddenly seized in the early morning with diarrhœa, vomiting, and cramps. Before anyone knew that she was ill—before another sister sleeping in the same room awoke—the stage of collapse had already set in. When I saw her, about 5 A.M. (probably within two, or at most

three, hours from the onset of the illness), she was shrunken and cold, her features pinched, eyes dull and sunken, cheeks hollow. Her extremities were wrinkled and of a leaden hue, her finger tips and nails quite blue. Her voice was reduced to a husky whisper. Her pulse at the wrist was still just perceptible. The vomited matters and the evacuations from the intestine, which had been kept for my inspection, were alike "rice-watery," with abundant flocculent deposit resembling grains of boiled rice. The cramps were still severe, though of shorter duration, and the patient's struggles were very feeble. The cramps were most marked in the calves, feet, and abdomen, though they extended in a lesser degree to the muscles of the thighs, chest, neck, and upper extremities. The limbs were being vigorously rubbed, and hot bottles surrounded the patient. A mustard poultice was now applied to the pit of the stomach, a hypodermic of 10 grains of chloral hydrate given, and an enema of warm tannic acid solution slowly and carefully administered. While this was being done, a neutral saline solution (the ingredients of which were kept in readiness) was prepared. 5 ounces of this warm neutral saline solution were then slowly injected through a Southey's cannula into the subcutaneous cellular tissue in the inner side of the arm, near the axilla. On pinching up the wrinkled skin to introduce the trocar and cannula, instead of gliding over underlying structures, it gave the sensation of being frozen stiff, and creaky underneath. While the injection was proceeding, the pulse at the wrist, which at the beginning was imperceptible, was felt to gradually return, and by the time the injection was finished it was easily countable. The general appearance of the patient at the same time greatly improved. Friction and massage of the extremities were continued; enemata of warm tannic acid solution were repeated at intervals, and in great part retained. After an interval of two hours, as the pulse at the wrist again began to flag, other 5 ounces of the warm neutral saline solution were injected into the subcutaneous cellular tissues, with the same good result as before. Thereafter, while the patient was kept warm and enemata continued, these subcutaneous injections of warm neutral saline solution, with now a little liquor strychniæ added, were repeated at intervals of two and three hours during the rest of the day (other sites being selected besides the inner sides of the arms); and by evening the patient was out of immediate danger. Next day three subcutaneous injections, of 3 ounces each, were given. Suppression of urine was complete, and continued so for three days. On the morning of the fourth day the patient voided 2 ounces of urine, and thereafter urine in increasing quantity was voided regularly at intervals of four hours or thereabouts. The subsequent course was one of steady improvement; and by the end of a fortnight the patient was able to be up, while by the end of a month she was at work again, as well and active as ever. I omitted to say that marked irritability of the stomach continued throughout the first week of illness. For the first four days not even a teaspoonful of water could be taken by the mouth. During this time the tannic acid enemata were gradually replaced by enemata of plain boiled water, then of peptonised milk and other nutrient fluids. On the fifth day teaspoonfuls of water, given at longer or shorter intervals by the mouth, were retained. Water was replaced by more nourishing fluids, and feeding by the mouth re-established.

While cholera was raging among the natives, only two other foreigners here, and these not residents in the Concession, were attacked. One, a much less severe case than that just detailed, recovered; the other, a weakly subject, debilitated by recent sickness, succumbed. The

latter case did not come under my notice, but I believe treatment was carried out on much the same lines as in the severe case related above.

In a Chinese city the spread of epidemics of "water-borne" diseases such as cholera and typhoid is no doubt limited by the fact that the Chinese never use milk, and that a very large proportion never drink water except in the form of tea, thus insuring that the water has been boiled, and is probably sterile when drunk. In the large factories here tea infusion is supplied to the workmen at all hours, from large cauldrons placed at convenient corners in the work-sheds. With them it has become a habit to drink only from those cauldrons; and when cholera was epidemic it required little extra supervision to see that no unboiled water was used. In addition to this, the workmen are cleanly housed and well cared-for on the premises. In proportion, then, to the habits formed and to the care exercised, cholera found no hold in these factories.

METEOROLOGICAL TABLE, June 1894 to September 1895.

Month.	Winds.						Weather.			Barometer.		Thermometer.		Water Mark, First Day of each Month.	
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Variable.	No. of Days Calm.	No. of Hours Fog.	No. of Hours Rain.	Rainfall.	Highest.	Lowest.	Maximum.	Minimum.		
1894.									*Inches.*	*Inches.*	*Inches.*	° *F.*	° *F.*	*Ft.*	*in.*
June	5	10	4	5	6	...	...	80	7.80	29.810	29.470	97	61	36	2
July	3	1	22	2	2	1	...	21¾	4.96	29.940	29.452	100	74	42	5
August	9	6	8	3	5	...	2	19½	1.26	29.950	29.410	104	75	33	8
September	18	5	...	1	6	...	...	147½	9.46	30.080	29.780	94	62	34	1
October	23	5	...	1	2	...	...	47½	3.80	30.326	29.870	83	53	35	11
November	14	10	...	1	5	...	...	22	1.53	30.520	29.950	76	41	35	2
December	11	7	...	9	3	1	5	56	1.63	30.570	29.900	79	28	18	3
1895.															
January	16	5	2	4	4	...	3	22	0.53	30.500	29.928	62	26	6	11
February	7	8	1	4	7	1	15	51	2.92	30.430	29.500	68	32	1	5
March	7	11	2	6	5	...	4½	105½	6.71	30.480	29.540	80	25	0	1
April	8	5	2	7	8	...	18¾	52½	5.43	30.250	29.456	92	47	6	8½
May	8	12	1	3	7	...	...	63	4.85	30.258	29.540	93	52	14	4
June	5	8	5	5	7	...	...	26	2.82	29.920	29.464	100	62	29	11
July	5	10	1	6	9	...	...	76¾	6.24	29.762	29.467	102	70	25	6
August	14	3	6	2	6	...	...	8	0.78	29.856	29.480	103	69	36	7
September	16	1	...	8	5	...	...	5	0.60	30.128	29.524	95	63	39	7

DR. GEORGE R. UNDERWOOD'S REPORT ON THE HEALTH OF KIUKIANG

For the Year ended 31st March 1896.

THE health of foreigners residing at this port has been very good during the past 12 months. With about the usual number of minor ailments, there have been fewer cases of serious illness, and till nearly the middle of March we were free from epidemic disease. Since then there have been several cases of measles, which malady has been prevalent in the city for the last two months.

Small-pox, a regular visitor nearly every winter among the native population, has not been met with among foreigners, except in one case, that of an officer from a war ship in harbour. The disease—contracted in Shanghai—was in the confluent form, and the patient made a good recovery. With the precautions taken, there was no spread of the mischief on shore, and the revaccination of the whole crew prevented further outbreak on board. Though most of the men had been revaccinated since coming to this station, it is worthy of note that of 62 vaccinated, the vaccination was more or less successful with all but one, and he a Chinese, while with a number it was very effective. The lymph used was from Saigon.

There was but one case of typhoid, also imported, and the patient did well, the course being mild all through.

Intestinal troubles were not more prevalent than usual, though the only death in the year was that of a male, æt. 37, who, weakened by simple diarrhœa, succumbed during the intense heat at the latter end of June. Another patient, suffering from chronic ulceration of the sigmoid flexure of an obstinate character, left for a colder climate before the hot weather, with the happiest result. Bismuth and Dover's powder (5 grains of each, three times a day), with enemata of boracic acid (6 grains to the ounce of warm water), proved effective in a case of chronic dysentery in a delicate patient.

Malaria has not been such a common cause of illness of late years, since the streets and compounds in the Concession have been raised, and now that the Municipal Council has filled in a large part of the pond at the back, I am hopeful that in future it will figure even less frequently.

The following case, of which only the outlines are given, is interesting:—A.B., æt. 36, whose home was in a native house in the city, went with his family, in July, to a village 9 miles from Kiukiang for the hot season. His health had not been satisfactory, and he had had slight malarial fever in spring, and again in the early summer. On the 20th August he travelled all day in an open boat, protected from the sun by an umbrella only. Two days later a large boil began on the right temple, with much pain, fever, and loss of appetite. It burst on the 26th August, and he was better for one day, when he again began to feel poorly and to complain of stiffness in the left groin and in the right calf. Afraid of more boils, he set out for

Kiukiang, and was so tired by his walk of a mile to the river and two hours' seat in a boat that he had much difficulty in getting over the half-mile to his house in the city. When I saw him the same afternoon, 28th August, his temperature was 103°; there was a swollen, tender gland in the upper part of Scarpa's triangle of the left side; and there was a tender swelling at the upper and outer part of the calf of the right leg. Quinine, in 6-grain doses three times a day, was prescribed, and poultices applied to the swellings. After three days the dose of quinine was increased. There was little improvement for the first 10 days. The morning temperature had come down slightly—to 100°–101°,—but in the evening it rose to 103°–104°. The swellings had not increased, were less tender, and with no sign of suppuration. Arsenic was now given, and iodine liniment applied to the swellings. The arsenic had to be given up after a few days, the temperature having risen, and quinine again resorted to. Progress was now made; the temperature fell to 100°–101°, and the patient, though still unable to straighten the left leg, went away on the 20th September for a 10 days' change on a house-boat. He came back on the 2nd October, his appetite much better, the tenderness almost gone from the inflamed gland and from the swelling in the calf, and the temperature remained much the same. Three days after his return he complained of severe neuralgic pains in the superficial nerves of the abdominal wall on the left side, and the right calf again began to swell. The pains, which were aggravated by movement, were got rid of in eight days, and the swelling of the calf was reduced by poulticing. But now was noticed a swelling of the abdominal wall in the left iliac region, extending along Poupart's ligament upwards to the crest of the ilium. This swelling, firm and tender to the touch, gradually increased, spreading inwards over a space 2½ inches wide, and upwards to the middle of the crest of the ilium. From the beginning of October the fever was irregular, usually over 100° the whole 24 hours. With the swelling the patient had attacks of intense pain in the iliac region, and the temperature would then rise to 104°. At first the pain began about 4 P.M. and lasted till 7 or 8 P.M.; and after three days there would be a second attack. Of these there were four. Afterwards the attack continued for three days, the second day being more severe than the first or third; then after three days' rest, another spell of pain. Of these crises the patient had three, and while they lasted he took scarcely any food. Early in November there was another change, and the fever came every second day, with less severe pain in the swelling. At one time antipyrin gave relief; at another, morphia only. Quinine, though most persistently taken, seemed to have no influence on the pain or temperature. Though the swelling continued firm and hard, I believed that there was deep-seated suppuration, and advised the patient to leave the country for home. He was much exhausted and emaciated when taken on board the steamer, on the 20th November, and could scarcely get about on crutches. The first day at sea the fever left entirely, and in two weeks from the time he went away the crutches were laid aside for good. The swelling in the iliac region gradually became smaller, and by the end of January hardly any trace of his illness remained.

There were seven foreign births during the 12 months, four males and three females.

The year has been a fairly healthy one for the native population, there having been few cases of cholera in autumn (only one was seen at the hospital), and no small-pox was heard of in winter. On the other hand, there were more than the average number of intermittent

fever cases. Of these, 665 were treated at the dispensary, a large per-centage out of 6,021 patients. The numbers in the different months were as follows:—

Month.	Quartan.	Tertian.	Quotidian.	Total.
1895.				
April	22	8	8	38
May	15	10	4	29
June	16	20	13	49
July	16	28	24	68
August	28	45	34	107
September	33	44	48	125
October	26	13	31	70
November	24	9	6	39
December	32	10	4	46
1896.				
January	32	8	7	47
February	24	6	6	36
March	6	3	2	11
Total	274	204	187	665

The epidemic of measles was widespread, and it is said that there were many deaths. Three children at a mission school in the city had broncho-pneumonia as an accompaniment, and got over it satisfactorily. At the orphanage of the Roman Catholic Mission there were 140 children down at once, and in all there were 150 cases, the ages being from 5 to 9 years. Three died—one from throat mischief, and the other two from some affection of the lungs, in the opinion of the sisters. In all three the eruption did not come out well, and after death there were petechiæ on the neck and trunk.

I am indebted to the Harbour Master, Mr. Deighton-Braysher, for the following meteorological data:—

Month.	Thermometer.		Month.	Thermometer.	
	Maximum: highest Reading.	Minimum: lowest Reading.		Maximum: highest Reading.	Minimum: lowest Reading.
1895.	° F.	° F.	1895.	° F.	° F.
April	94	50	November	78	34
May	97	56	December	69	27
June	105	61			
July	103	70	1896.		
August	107	68	January	73	29
September	95	56	February	63	28
October	88	46	March	76	31.6

The rainfall for the year was 34.15 inches.

Dr. E. H. HART'S REPORT ON THE HEALTH OF WUHU

For the Half-year ended 31st March 1896.

My residence in Wuhu dates from 2nd December 1895, so it will be impossible to give an extended or complete Report of the health of this place. However, I have seen enough to prove the necessity of certain changes in the sanitary arrangements. Wuhu, like many Chinese cities, plays a close second to the dirtiest city in the Empire. Wuhu mud and slush are proverbial. It is high time that this port, which has been opened to foreign trade since 1877, were placed in a better condition, by having a properly laid out Concession, where the drainage from houses and streets could be controlled, and all garbage and refuse disposed of in such a manner as to render the business portion of the town a healthy place to live in. At the present moment the principal drain in the port empties its foul contents and pestilential odours on to the river bank, about 100 feet in front of the building occupied by the Tidesurveyor as a residence. During high water this disease-breeding nuisance's outlet is covered, but when the water falls it forms once more its slimy way beside the Customs landing. On the vacant lots in the rear of the buildings occupied by the Assistants of the Customs staff are great piles of rubbish, which have been accumulating for several years and are increasing in size daily. These heaps of concentrated filth bid fair, unless removed at an early date, to become active and valuable aids in the spread of malaria and kindred diseases, which have already too strong a hold on the inhabitants of Wuhu. The houses in which the Assistants live are built in such a way as to render the ground floors unfit for human habitation; they are all damp and mouldy. The upstair apartments are barely fit to live in. These buildings serve one purpose, however,—they draw a good rental for their owners. Outside of the Customs, the residents of Wuhu have their dwellings on high ground, away from the native city and suburbs, and so situated as to render their homes as healthful as any in China.

Considering the insanitary state of affairs near the Custom House, I am surprised that Wuhu can show such a clean bill of health.

During the past four months there have been but a few serious cases of sickness among the foreign residents. Most of the disorders have been such as rendered themselves amenable to treatment. In December and January several cases of influenza came under my observation: quinine, phenacetin, and Dover's powder proved effective remedies. The outbreak was not confined to foreigners, as I saw a number of natives with the same trouble.

The following is a list of the diseases treated among members of the foreign community since I took charge of the medical work here:—

Alcoholism.	Malaria.
Capillary bronchitis.	Measles.
Chronic bronchitis.	Neuralgia.
„ diarrhœa.	Otorrhœa.
Dysmenorrhœa.	Rheumatism.
Inflammation of the frontal sinuses.	Sprained knee.
Influenza.	

In the treatment of alcoholism I found sulphonal, given in doses of 7 or 8 grains every three hours, very helpful. After two or three doses the patient would generally get the benefit of several hours' sleep. In one case, a Chinaman who had not slept for three or four days, two doses were given, of 8 grains each—the first at 5 in the evening and the second at 8,—with the result that he had a good night's rest. This same patient, a couple of days before he came under my observation, had bitten his tongue so badly that about one-fifth of it sloughed off. He made a rapid recovery under sulphonal and good care.

Surgical Memoranda.

Among the more interesting surgical operations performed during the last few months, the following may be mentioned.

Removal of Tumour of Left Eye.—A girl, 6 years of age, presented herself at the hospital with a large tumour of the left eye. She was in a filthy condition, her clothing being covered with pus and broken-down cells from the tumour, which was considerably ulcerated on its external surface; rather feeble, had some fever daily, and looked as if her days were about numbered. I suggested to the father the advisability of an operation. To this he readily assented, and the operation was duly performed. The child made a rapid and uneventful recovery, and left the hospital with a considerable gain in weight, appearance, and spirits. The tumour involved the whole of the left eye, which had to be removed with the mass, and the entire orbit was thoroughly scraped and afterwards packed with iodoform gauze. The tumour weighed 2 pounds, and proved by microscopical examination to be a mixed-celled sarcoma.

Ligation of the Femoral Artery for Elephantiasis.—The patient, a farmer, about 40 years of age, came to the hospital early in March with elephantiasis of the left leg. A friend suggested to him that an operation would be beneficial, and as this suggestion met with general approval, I ligated the femoral artery where it enters Hunter's canal. The wound healed by first intention, and in four days the leg was one-third smaller. When he left the hospital the two legs were about the same size.

Operation for Radical Cure of Hernia.—Early in March a farmer, about 25 years of age, presented himself at the hospital. He had been wearing a truss for about a year, and complained that it would not keep the hernia reduced. After some consideration, he expressed himself as willing to act on my suggestion and undergo an operation. He has thus far made

a good recovery. I performed McBurney's operation, which I consider the safest in China, as the wound has to heal by granulation and one is better able to keep the patient in bed the required length of time—three to four weeks.

Amputation of the Forearm.—A soldier while assisting at a salute given to the Viceroy Chang Chih-tung, who passed through Wuhu on his way to Wuchang, got his hand and arm in front of a cannon, with the result that his hand was blown away and his forearm shattered. He remained on board his boat for several days before consulting a foreign doctor. In the meantime the wounded member had been covered with some dirty Chinese medicine and wrapped in sundry blue and green cloths. I amputated the forearm at the junction of the middle and lower third, saving all the tissue possible, so as to give him a serviceable arm for the future. As, however, the wound was infected at the time, he made a rather slow recovery.

Meteorological Table, October 1895 to March 1896.

Month.	Thermometer.		Barometer.		Rainfall.
	Maximum.	Minimum.	Maximum.	Minimum.	
1895.	° *F.*	° *F.*	*Inches.*	*Inches.*	*Inches.*
October	89.5	58.5	30.290	29.770	0.91
November	76.5	33.0	30.700	30.032	1.83
December	62.0	24.5	30.630	30.050	1.43
1896.					
January	70.0	26.0	30.572	29.752	0.90
February	62.5	24.0	30.672	30.050	0.96
March	71.0	27.0	30.664	29.560	2.94

DR. ALFRED HOGG'S REPORT ON THE HEALTH OF WENCHOW

For the Half-year ended 31st March 1896.

DURING the period under review the health of the foreign community has been very good, except in October.

In the summer there was a severe outbreak of cholera in and around the city, which lasted till the end of October; but the advent of cooler weather, and some heavy showers to replenish the stagnant canals and wells, resulted in the disappearance of this scourge, but not until four foreigners and a large number of natives had fallen victims to it.

The infection somehow gained entrance into one of the mission compounds here, and manifested its presence by carrying off a European infant and three Chinese schoolgirls.

Immediately afterwards one of the missionaries in the compound was attacked. The symptoms were at first amenable to treatment, and great hopes were entertained of his recovery; but the shock to the system was too severe, and he succumbed in four days.

His wife was also seized, on the second day of his illness, and, in spite of prompt attention, died in 40 hours.

Another colleague took ill on Sunday morning, collapsed in a few hours, and expired within 24 hours.

In connexion with these cases I have to record my grateful thanks to Dr. J. H. LOWRY, of the Customs here, who had fortunately been detained by the non-arrival of the steamer, and also to Dr. PENNY, of H.B.M.S. *Firebrand*, which was then in port. Both these gentlemen rendered valuable assistance in the work of nursing and attending the patients.

Among other cases in the foreign community I attended the following:—

Bronchial catarrh.	Dyspepsia.
Malarial fever.	Tonsillitis.
Insomnia.	Prolapsus ani.

One lady had a severe attack of intermittent fever, with pulmonary complications, and, owing to delay in seeking advice and treatment, the case for a time assumed a somewhat serious aspect, but ended satisfactorily.

A large number of Chinese have been seen and prescribed for at the Free Methodist Dispensary. Pulmonary diseases, especially phthisis, seem to be largely prevalent among them.

I append an abstract from the Customs meteorological observations of the port, for which I am indebted to Mr. W. G. HARLING.

METEOROLOGICAL TABLE, October 1895 to March 1896.

MONTH.	BAROMETER.		THERMOMETER.		RAINFALL.	
	Highest.	Lowest.	Maximum.	Minimum.	No. of Days.	Quantity.
1895.	*Inches.*	*Inches.*	° *F.*	° *F.*		*Inches.*
October	30.300	29.900	82	59	12	2.08
November	30.600	30.040	78	48	3	1.64
December	30.524	30.000	68	38	7	1.31
1896.						
January	30.500	29.912	65	37	9	3.33
February	30.500	29.980	66	35	13	3.74
March	30.460	29.830	64	35	6	1.40

DR. HENRY LAYNG'S REPORT ON THE HEALTH OF SWATOW

For the Year ended 30th September 1895.

DURING the year under consideration the general health of the foreign population has been most satisfactory. The same cannot be said with regard to the natives, who have suffered from epidemics of bubonic plague and cholera, from a far greater prevalence of fevers in a severe form, from a mild epidemic of beri-beri, and from the poverty that follows on bad harvests. The partial failure of two rice crops was caused by the exceptionally dry seasons.

During the summer of 1894, whilst bubonic plague was raging in Hongkong and Canton, many thousands of Chinese returned to Swatow and the neighbouring districts. Careful inspection of all passengers from Hongkong was made by myself during the months of June and July. Some 11 cases were removed from the steamers and placed in a mat-shed hospital specially built for the purpose; it was situated on the north bank of the harbour, about 1½ miles from the town of Swatow and half to three-quarters of a mile outside the harbour limits. Of these 11 cases, nine died and two were discharged cured, one after a prolonged stay of 42 days. One case of high fever was also admitted, but, the suspicion of plague not being established, was discharged the following day. A native doctor was placed in charge of the hospital, which was visited daily by myself.

The regulations carried out during the months of June and July 1894 were of great benefit to the port, and probably spared us an epidemic in that year; but they would have proved of far greater help had they been in force some weeks earlier. Previous to the medical inspection of the steamers passengers already suffering from plague were carried on board. Afterwards the steamer officers exercised greater care, and in many vessels every passenger on arrival was carefully examined by one of the ship's company, and if showing any suspicious signs of disease was refused a passage.

One indirect beneficial result of the inspection in Swatow was that steamers carrying large numbers of emigrants returning from the Straits came direct to Swatow instead of calling at Hongkong, and in two or three instances the passengers were transhipped in Hongkong direct from the Singapore boat to one bound for Swatow.

The mere inspection of passengers after only a few hours' journey from the infected port is undoubtedly inadequate, and must necessarily be so with any disease having an incubation period exceeding the number of days spent on the voyage. Still, as already pointed out, it had its advantages.

In all, 40 steamers were inspected, and seven were detained on the quarantine ground for the purpose of disinfection, the detention in no case exceeding 48 hours.

A weak point in such preventive measures is the traffic overland and that by junk, over which it is impossible to attempt any control.

In the summer and autumn of 1894 some few cases of plague occurred, and numbers of dead rats were said to have been seen.

In February and March of 1895 the presence of plague was reported, but it was not until the middle of the latter month that any case was observed by a foreigner. From the 16th March to the 24th April there were 10 deaths. After that the epidemic increased rapidly. Happily, however, it was of short duration, as a month later it was decreasing in severity, and on the 17th June the port was declared free.

From Swatow the disease spread to Ch'ao-yang, a large town to the south, with which we are in daily communication by steam-launches. Thence it extended to Chia-chia-shan. The epidemic was most severe in Ch'ao-yang, but I am unable to give any reliable statistics. For Swatow I have a record of 93 deaths, and 51 cases the termination of which I was unable to ascertain. My estimate is that the total number who succumbed cannot have been much under 400. Of the total population of this port—about 23,000,—a very large proportion have not their homes here; consequently many went home directly they were attacked. Almost every day one heard of some cases leaving. Of these it was impossible to obtain anything like reliable facts. In my record of deaths and cases I have counted only those of which I am certain.

One case occurred in Kakchio, the village on the south side of the harbour where many foreigners reside.

In Swatow women and young children suffered greatly, the reason, no doubt, being that they but rarely leave their houses. The idea that the poison was in the houses was quickly taken up by the Chinese, and I know of several instances where, after two or three had fallen victims, whole households migrated, the result being in each case that no more were attacked.

During the epidemic I saw some 15 cases of the so-called abortive form of bubonic plague, in which the symptoms were so slight that the illness lasted only two or three days. The clinical signs were sudden rise in temperature, to 101° to 103°; furred tongue and enlargement of a gland; loss of appetite; followed by convalescence in 48 hours.

In a Chinese town it is practically impossible, in one short epidemic, to study in its whole course such a disease as bubonic plague. Most of the patients were by courtesy visited in their own homes, and therefore no chance for examination of the blood occurred. Cases were seen in all stages, but, except on four occasions, I was unable to follow the disease from commencement to termination, and hence write nothing about its clinical signs.

Cholera was epidemic in Ch'ao-yang at the same time that plague was raging, and later, in August, it appeared in a region some 40 miles to the north of Swatow.

DR. H. M. McCANDLISS' REPORT ON THE HEALTH OF HOIHOW (KIUNGCHOW)

For the Year ended 31st March 1896.

THE general health of the foreign community in Hoihow and Kiungchow has been good, with the following exceptions:—

An officer on one of the Customs revenue steamers, who had a fibroid lung on the left side, died suddenly while on a cruise, and was brought back to Hoihow for burial. When last seen by a medical man the disease seemed to be making very little progress.

Several members of the Customs staff suffered from malarial fever.

A member of the out-door staff "caught cold" while "afloat" early in August. The bronchitis got better, and was almost well, but in December became worse, and he went to Hongkong for regular hospital treatment. He came back about the 1st April looking somewhat improved.

One of the merchants had two severe attacks of gout, in which the usual colchicum treatment was effective.

Four members of the missionary body suffered, one after another, with a fever that in each case lasted about 8 or 10 days. Large doses of quinine were used without much benefit. There was no eruption and no diarrhœa, and in all four cases the pulse was abnormally slow. Whereas the pulse beat in health was from 65 to 80 per minute, during this fever, and with a temperature above 102°, the pulse rate was from 45 to 60. In conducting several thousand fever cases I have not before observed this peculiarity.

The captain of a Customs revenue steamer and a missionary had each an attack of jaundice.

The winter of 1894–95 was marked by an epidemic of small-pox, and although its ravages in Hoihow and Kiungchow were not severe, all the country to the west of these cities suffered greatly. Inasmuch as almost every adult has had either variola or vaccinia, the mortality was confined mainly to children. I visited villages in which nearly all of the children had died. Convalescents from small-pox mix freely in crowds, and the second-hand clothing of small-pox patients is sold without any discretion. Two patients in the Mission Hospital, who were convalescing from other diseases, bought some of this second-hand clothing, and broke out with small-pox. Against all advice, their friends carried them home, thus doing their share toward spreading the disease.

In the days when Chinese soldiers fired only with muskets the arrangement of their military parade grounds answered very well, for during shooting practice those bullets which

did not hit the target either fell to the ground or were stopped by the stone wall beyond. Now that rifles are used it is a different matter.

A bullet glanced from one of the iron target bars and entered a boy standing at some distance. It was much flattened, and I removed it from its lodging-place against the right internal iliac artery. The boy made a good recovery.

In December, when out for the hour before sundown recreation, I was passing a point in the line of fire, but about 500 yards beyond the target. A soldier, on his way from camp to buy his evening marketing, had crossed the line of fire just as the last shot was fired, and about five minutes before I reached him. He was walking in a direction diagonally away from the target. The bullet passed through the upper portion of the left lung and came out at the border of the axilla. He walked a few steps and fell down beside a grave. Although alone when first seen, a crowd soon gathered and helped me to bandage him. But he went into a long swoon, and I gave him up for dead and left him to his comrades. However, he came to, and his officer had him carried to the hospital the same night. I plugged and bandaged, but he died from internal hæmorrhage early the next morning.

On the 13th December, at 11 A.M., I was called to see a Chinese woman who, 48 hours before, had given birth to a healthy boy, but the old midwife could not get the after-birth away. On examination I found a large abdominal tumour and the placenta firmly adherent. I diagnosed twins. To bring on the pains again, I administered 15 grains of quinine. At 6 P.M. the second boy was born. Neither after-birth would come away; so at 9.30 I returned, and found the house completely encircled with a line of burning straw to prevent devils from entering it. Inside the house the demons were being kept off by three men who brandished swords. Chloroform was administered, and after great difficulty the placenta was peeled away with the finger-nails. The two placentæ were firmly attached to each other, but the cords were separate. Gave another 15 grains of quinine and kneaded the uterus until it was a hard ball. Mother and children did well; but when I called 10 days after, the second baby had been allowed to die of starvation, because twins were not wanted.

In the Mission Hospital there were about 400 patients in the wards during the year. The practice is largely surgical.

The plague made its appearance in the junk port of Pochin, about 20 miles from Hoihow, early in February 1895, but did not get a good start in Hoihow until about the 1st April. From that time on, for about five months, the disease worked havoc in Hoihow and the surrounding villages, and out of a population of 30,000 there were about 3,000 deaths. The description of the disease varied in no way from that reported at Mengtsz, Pakhoi, Canton, and Hongkong. The mortality among all cases was about 70 or 75 per cent. No treatment by the Chinese was effectual, but they have great faith in puncturing the buboes. Foreign medical aid was not asked for, but some who had heard of foreign medicine used either turpentine or tincture of iodine locally.

At about the same time a Hoihow shopkeeper, whose home was at the north gate of Kiungchow, was taken with plague in Hoihow and carried home to die. 30 cases resulted in his neighbourhood, but it did not spread elsewhere.

The disease broke out again in Kiungchow in January 1896, and it is worth while to call the attention of writers on the subject to some circumstances connected with the rise and spread. Some hold that a peculiar kind of soil, and others that an extremely dry season, is needed. First, the soil. Hoihow is built almost entirely on river and sea sand, and is flat as possible; Kiungchow is built on a high ridge of volcanic mud or clay. Second, the humidity. April 1895 was dry, with only 0.92 inch of rain, and the plague started in Hoihow. In May the rainfall was 6.95 inches, in June 4.61 inches, in July 7.42 inches, and in August 4.44 inches, and then the plague had nearly run its course. However, one can hardly speak of such weather as being a drought. Then, again, when the plague broke out in Kiungchow in January 1896, although the rainfall was only 1.83 inches, it was cloudy and damp. In February there were 4.43 inches of rain—mostly drizzle,—and only once was the sun visible, and then but for a few hours; but the Kiungchow people have died in great numbers. So that, judging the disease from what we have seen of it in Hainan, it is not dependent upon peculiarities of soil, nor upon a particular kind of weather.

Nor is it dependent upon mere personal contact—as, for instance, between doctor and patient,—as I have been in close attendance upon nearly 50 patients in their own homes during the last three months, visiting as often as twice a day, and where opening of buboes was required, or where the carbuncles needed cutting or scraping, have bent over the patient from 10 minutes to half an hour at a time—and in one severe case, more than an hour, with the carbuncle 6 inches long, 5 inches wide, and very deep, full of maggots, and the atmosphere stifling,—yet the disease has not attacked either myself or my assistant.

There are, however, several methods of propagation of which I can give examples. In a house next to the Mission Hospital there had been several deaths from plague, and those still living deserted it and fled. The head thief quietly took possession of the empty house. After living there six days his wife reported to me that he suffered from fever, and on examination I found he had plague, of which he died the 3rd day. His wife remained in her former home and was free from the disease.

Two grave-diggers—an old and a young man—whom I have employed many times to bury abandoned moribund patients left on my hands lived in a shanty at the back of the former hospital building. They claimed that grave-diggers enjoyed an immunity from plague; both, however, contracted it while pursuing their vocation, and died, the one in 48 and the other in 60 hours.

In a family consisting of husband and wife and two little girls the elder girl was attacked with plague, and I attended her. The father, whose business was in Hoihow, returned home. He was much attached to this child, and therefore, when I urged isolation, he sent his wife and the second girl to another part of the house while he cared for the sick girl. On the 10th day he, too, contracted the disease, and, though nursed by his mother, died five days after. His wife and the other child remained well, but the plague-sick daughter died on the 20th day.

A little boy, whose mother was a servant in a large establishment, was very fond of a sick cat, which he dragged about until it was found to have both buboes and carbuncles.

The cat soon died, and the infection having passed to the boy, he was under my care until he became well again.

A Chinese teacher, whom I had employed years ago, resided in a row of houses near the west gate which hitherto had been free from the pestilence. Next door to him lived an old woman who for a small sum had bought three sick pigs, but in spite of her care they died, and later on she met with the same fate. Then the rats, my teacher, and his eldest son were successively attacked and succumbed. Finally, the whole row of houses became polluted, with fatal results to a large number of the occupants.

There is, to my mind, every reason to suppose that through the agency of infected rats or human beings, and even cats and pigs, the disease can become lodged in a house, in the ground, or perhaps in a drain, and the poison continue active until the plague cultures run their course or die out. My experience induces me to believe that the easiest way to contract the malady is to sleep in contaminated quarters with the windows and doors shut, so as to confine the poisonous atmosphere; and that the best method of securing immunity from it is to avoid infected animals and places, obtain plenty of fresh air, and sleep above the ground floor.

The house of the Commissioner of Customs is as clean as one could wish; but in the spring of 1895, while the Commissioner, living in well-ventilated rooms upstairs, retained perfect health, three Chinese servants died in the less airy quarters below. Although surrounded by cases of plague, the foreign residents enjoyed complete freedom from attack.

Of the 46 cases treated by me, 26 died—a heavy mortality,—and eight more would probably have succumbed but for the treatment. Nevertheless, I think more can be done by careful nursing than by medical treatment, and I am quite within the mark in saying that of the 26 fatal cases half would have recovered with good nursing.

My treatment has only been on general principles. For the first few days combat the high fever with quinine and antipyrin, and overcome the almost constant constipation with either calomel, santonin, and rhubarb mixture, or with plain Epsom salts. When the buboes are hard, poultice them; when soft, puncture, and dress with iodoform and boric acid. Although the temperature usually falls as the buboes form, the pulse remains rapid, and digitalis seems to do good. When the buboes discharge, or where carbuncles have formed (about 15 per cent. of my cases), besides the antiseptic dressing, I use quinine, iron, and nux vomica freely.

Though not always the case, yet I have noticed that carbuncles are apt to form where bed-sores would naturally occur, but far more quickly than one would expect the latter.

Postmortems are out of the question, and histological investigation requires apparatus that cannot be readily obtained here; so that the working up of the pathology and histology must be left to those in more central places.

Mr. C. J. PRICE, the Harbour Master, has kindly furnished the appended rain record for Kiungchow.

RECORD OF RAIN, January 1895 to March 1896.

MONTH.	No. of Rainy Days.	Hours of Rain.	Quantity of Rain fallen.	MONTH.	No. of Rainy Days.	Hours of Rain.	Quantity of Rain fallen.
1895.			*Inches.*	1896.			*Inches.*
January	8	26	1.46	January	9	38	1.83
February	3	5½	0.12	February	22	145¼	4.43
March	5	19¼	0.32	March	14	133	0.88
April	4	6¾	0.92				
May	10	19¼	6.95				
June	12	24¾	4.61				
July	11	24¼	7.42				
August	9	14½	4.44				
September	13	39¾	12.86				
October	4	2¾	0.65				
November	6	28½	3.60				
December	2	6	0.17				
TOTAL	87	217¼	43.52	TOTAL	45	316¼	7.14

APPENDIX.

UNSATISFACTORY RESULTS OF POTASSO-TARTRATE OF ANTIMONY IN THE TREATMENT OF BUBONIC PLAGUE.

No. 3,067.
I.G.

CUSTOM HOUSE,
KOWLOON / HONGKONG, 14th *May* 1896.

SIR,

I HAVE the honour to append copy of a correspondence with the Hongkong Colonial Secretary, in which he communicates, for your information, the report of the Acting Colonial Surgeon showing the unsatisfactory results of the treatment of bubonic plague with the drug (potasso-tartrate of antimony) mentioned at page 52 of the Customs *Medical Reports*, 47th and 48th Issues, as possessing marvellous curative effects in the treatment of the disease.

I have, etc.,

(Signed) H. M. HILLIER,
Commissioner of Customs.

To

SIR ROBERT HART, BART., G.C.M.G.,
Inspector General of Customs,
PEKING.

ENCLOSURE.

Colonial Secretary to Kowloon Commissioner.

No. 736.

COLONIAL SECRETARY'S OFFICE,
12th *May* 1896.

SIR,

WITH reference to the Imperial Maritime Customs *Medical Reports* for the year ended 30th September 1894 (47th and 48th Issues), I am directed to state, for the information

of the Inspector General, that the drug (potasso-tartrate of antimony) mentioned at page 52 as possessing marvellous curative effects in the treatment of bubonic plague has been administered, in varying doses, to a number of plague patients in this Colony during the current year, but, as will be seen from the enclosed copy of a report by the Acting Colonial Surgeon, the results have been unsatisfactory.

I have, etc.,

(Signed) J. H. STEWART LOCKHART,

Colonial Secretary.

SUB-ENCLOSURE.

HON. COLONIAL SECRETARY,

WE have tried this drug, in varying doses, in more than 40 cases, and our experience is that it is no use in the treatment of this disease.

In many cases it induced so much vomiting and depression that it had to be stopped at once.

As our experience has been so unfavourable, we have ceased prescribing it.

(Signed) J. M. ATKINSON,

Acting Colonial Surgeon.

3/5/96.

II.—SPECIAL SERIES.

No. 1.—Native Opium	Published	1864.
„ **2.**—Medical Reports: 51st Issue (First Issue, 1871)	„	1897.
„ **3.**—Silk	„	1881.
„ **4.**—Opium	„	1881.
„ **5.**—Notices to Mariners: Fifteenth Issue (First Issue, 1883)	„	1897.
„ **6.**—Chinese Music	„	1884.
„ **7.**—Instructions for making Meteorological Observations, and the Law of Storms in the Eastern Seas	„	1887.
„ **8.**—Medicines, etc., exported from Hankow and the other Yangtze Ports, with Tariff of Approximate Values	„	1888.
„ **9.**—Native Opium, 1887	„	1888.
„ **10.**—Opium: Crude and Prepared	„	1888.
„ **11.**—Tea, 1888	„	1889.
„ **12.**—Silk: Statistics, 1879–88	„	1889.
„ **13.**—Opium: Historical Note; or the Poppy in China	„	1889.
„ **14.**—Opium Trade: March Quarter, 1889	„	1889.
„ **15.**—Woosung Bar: Dredging Operations	„	1890.
„ **16.**—Chinese Jute	„	1891.
„ **17.**—Ichang to Chungking, 1890	„	1892.
„ **18.**—Chinese Life-boats, etc.	„	1893.
„ **19.**—Report on Sound Trials of Sirens	„	1895.
„ **20.**—Chungking: Business Quarter and Mooring Grounds, 1896	„	1896.